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Changes for the Better

MITSUBISHI ELECTRIC

SPLIT-TYPE AIR CONDITIONERS

Revision B:
• MSZ-GE42/50VA - E1 has been added.

Please void OBH515 REVISED EDITION-A.

INDOOR UNIT

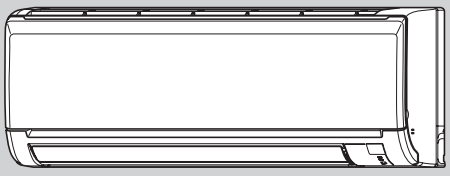
SERVICE MANUAL

No. OBH515
REVISED EDITION-B

Models

MSZ-GE22VA - E1
MSZ-GE25VA - E1
MSZ-GE35VA - E1
MSZ-GE42VA - E1
MSZ-GE50VA - E1

Outdoor unit service manual
MUZ-GE·VA Series (OBH516)
MXZ-A·VA Series (OB377)
MXZ-8A140A (OC316)



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PARTS CATALOG (OBB515)

NOTE:
RoHS compliant products have <G> mark on the spec name plate.

CE

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Revision A:

• 11. DISASSEMBLY INSTRUCTIONS has been corrected.
11-6. Photo 9 has been changed.

Revision B:

• MSZ-GE42/50VA - E1 has been added.

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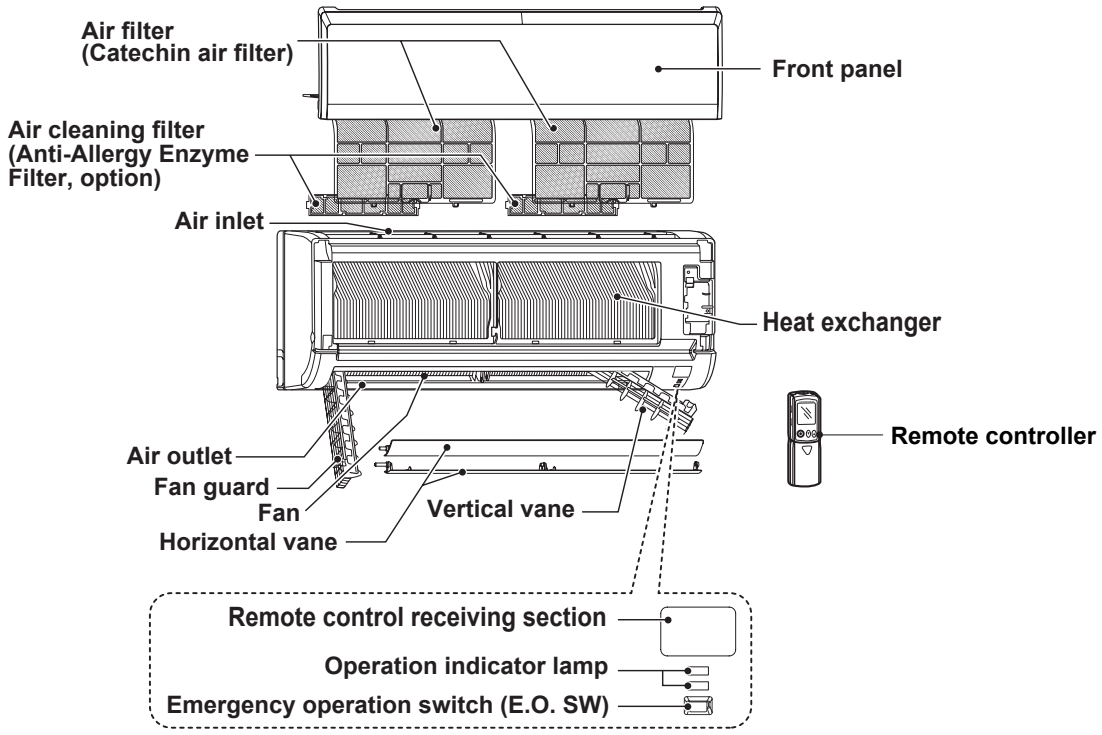
1 TECHNICAL CHANGES

MSZ-GE22VA - E1
MSZ-GE25VA - E1
MSZ-GE35VA - E1
MSZ-GE42VA - E1
MSZ-GE50VA - E1

1. New model.

2 PART NAMES AND FUNCTIONS

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA



ACCESSORIES

①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller holder	1
④	Fixing screw for ③ 3.5 × 1.6 mm (Black)	2
⑤	Battery (AAA) for remote controller	2
⑥	Wireless remote controller	1
⑦	Felt tape (Used for left or left-rear piping)	1

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3 SPECIFICATION

Indoor model					MSZ-GE22VA	MSZ-GE25VA	MSZ-GE35VA	MSZ-GE42VA	MSZ-GE50VA
Power supply					Single phase 230 V, 50 Hz				
Electrical data	Power input ✻1		Cooling	W	22		29		43
			Heating		23			30	39
	Running current ✻1		Cooling	A	0.22		0.29		0.39
			Heating		0.23			0.31	0.36
Fan motor	Model				RC0J40-FK				
	Current ✻1		Cooling	A	0.22		0.29		0.39
			Heating		0.23			0.31	0.36
Dimensions W × H × D				mm	798 × 295 × 232				
Weight				kg	10				
Special remarks	Air direction				5				
	Airflow	Cooling	Super High	m^3/h	678		762	768	906
			High		546 (552 ✻2)			624	714
			Med.		402		402 (414 ✻2)	516	576
			Low		288 (276 ✻2)		288	408	468
			Silent		246			348	390
		Heating	Super High	m^3/h	690			786	870
			High		546			624	732
			Med.		396		402	516	576
			Low		288 (276 ✻2)		288	420	468
			Silent		246			348	390
	Sound level	Cooling	Super High	dB(A)	42		43	46	49
			High		36			40	44
			Med.		29		30	35	38
			Low		21		22	30	33
			Silent		19			26	28
		Heating	Super High	dB(A)	42			46	48
			High		36			40	43
			Med.		29		30	35	37
			Low		21		22	30	33
			Silent		19			26	28
	Fan speed	Cooling	Super High	rpm	1,020		1,120	1,120	1,280
			High		860			950	1,060
			Med.		670		670 (690 ✻2)	810	890
			Low		530			680	750
			Silent		470			600	650 (690 ✻2)
		Heating	Super High	rpm	1,040			1,140	1,240
			High		860 (700 ✻2)			950 (930 ✻2)	1,080 (930 ✻2)
			Med.		670 (610 ✻2)			810	890 (840 ✻2)
			Low		530			690	750
			Silent		470			600	650
	Fan speed regulator				5				
Remote controller model					KM09A				

NOTE: Test conditions are based on ISO 5151.
Cooling: Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Outdoor Dry-bulb temperature 35°C
Heating: Indoor Dry-bulb temperature 20°C
Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C
✻1 Measured under rated operating frequency.
✻2 For multi system.

Specifications and rating conditions of main electric parts

Fuse	(F11)	T3.15AL250V
Horizontal vane motor	(MV)	12 VDC
Varistor	(NR11)	S10K300E3K1 (ERZV14D471)
Terminal block	(TB)	3P

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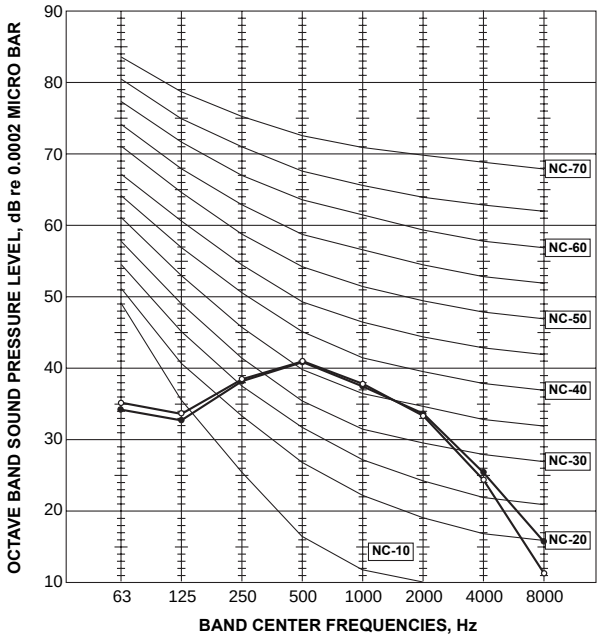
4 NOISE CRITERIA CURVES

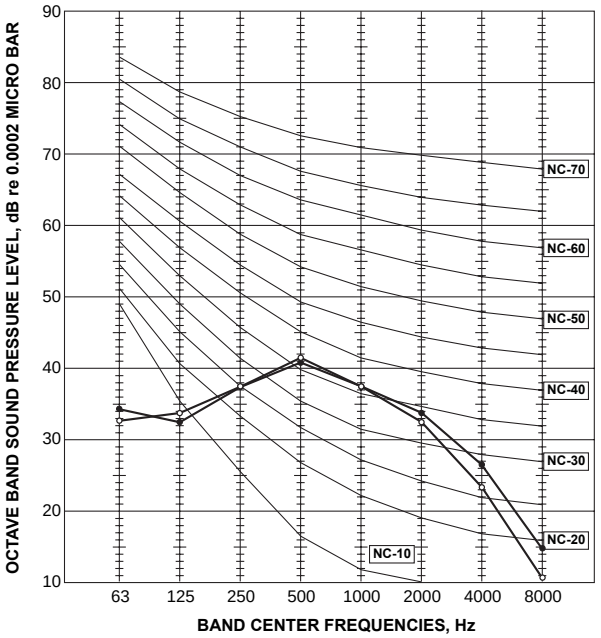
MSZ-GE22VA MSZ-GE25VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	42	●—●
	HEATING	42	○—○



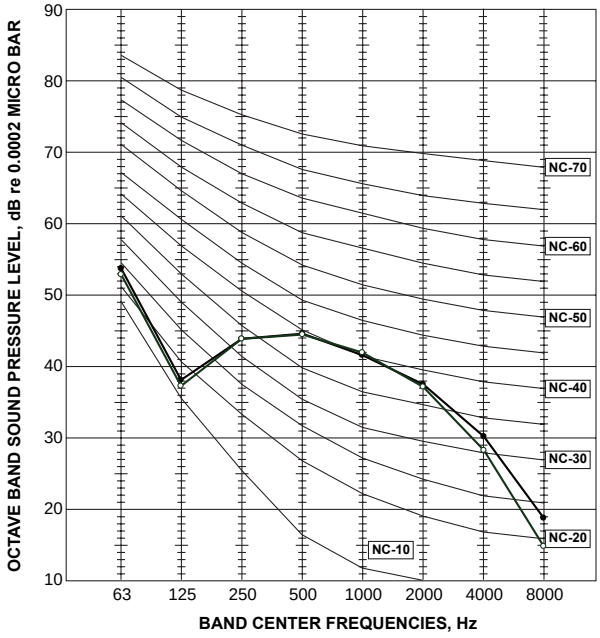
MSZ-GE35VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	43	●—●
	HEATING	42	○—○



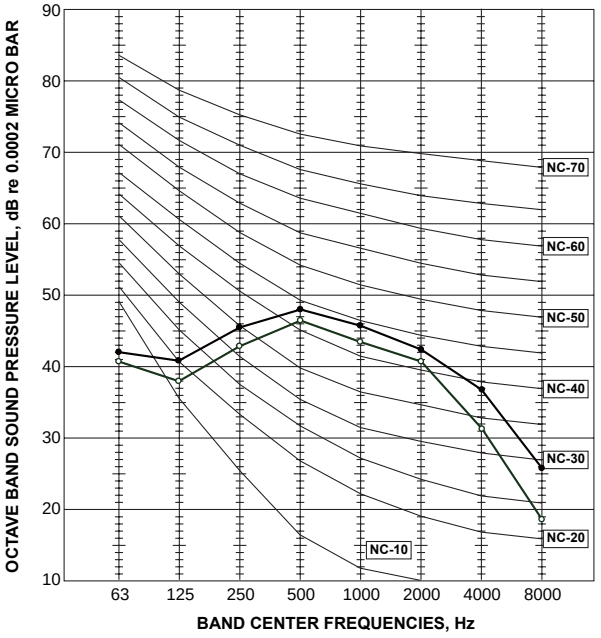
MSZ-GE42VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	46	●—●
	HEATING	46	○—○

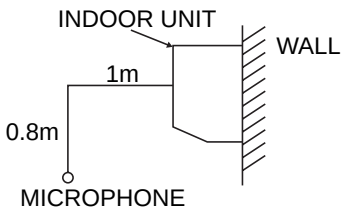


MSZ-GE50VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	49	●—●
	HEATING	48	○—○

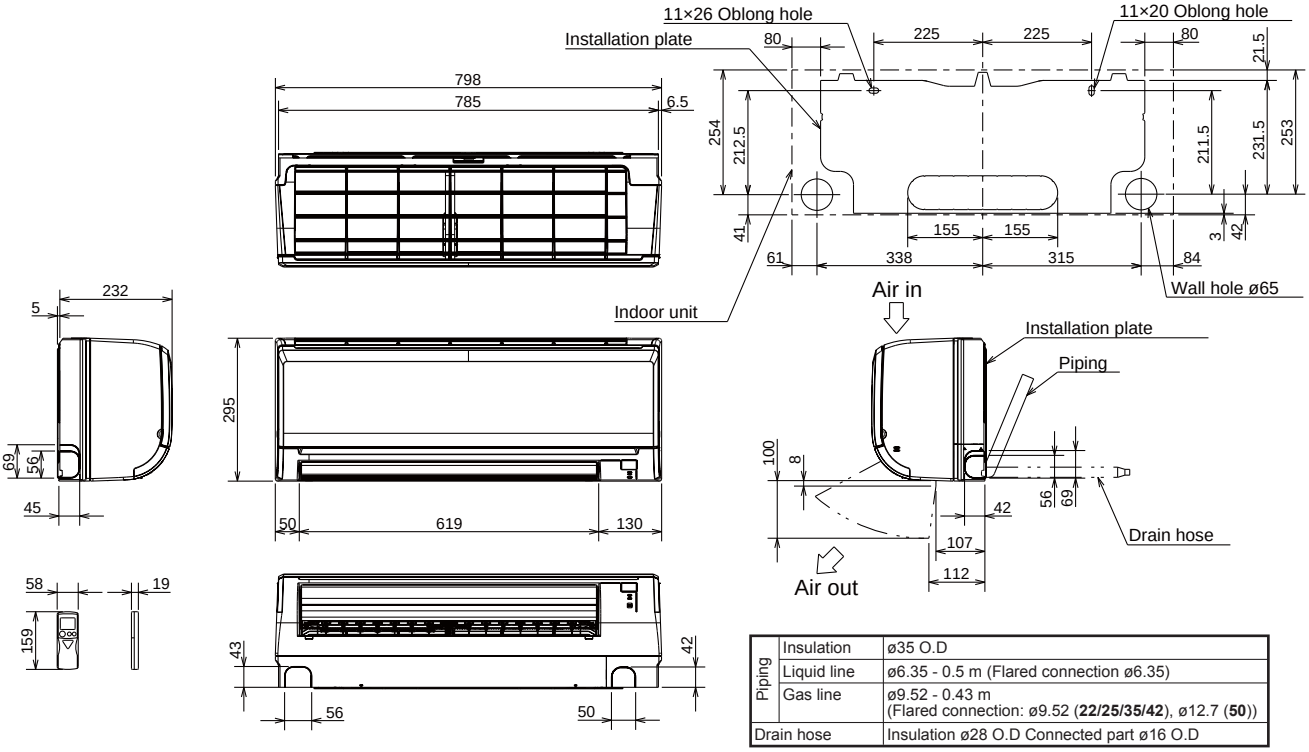


Test conditions
Cooling: Dry-bulb temperature 27°C
Wet-bulb temperature 19°C
Heating: Dry-bulb temperature 20°C



5 OUTLINES AND DIMENSIONS

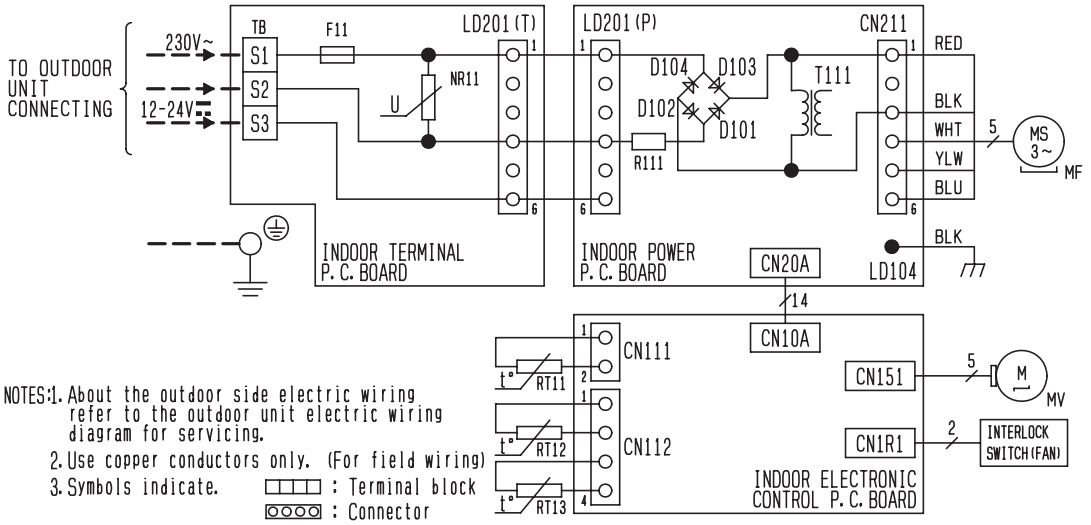
MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA **Unit: mm**



Piping	Insulation	ø35 O.D
	Liquid line	ø6.35 - 0.5 m (Flared connection ø6.35)
	Gas line	ø9.52 - 0.43 m (Flared connection: ø9.52 (**22/25/35/42**), ø12.7 (**50**))
Drain hose		Insulation ø28 O.D Connected part ø16 O.D

6 WIRING DIAGRAM

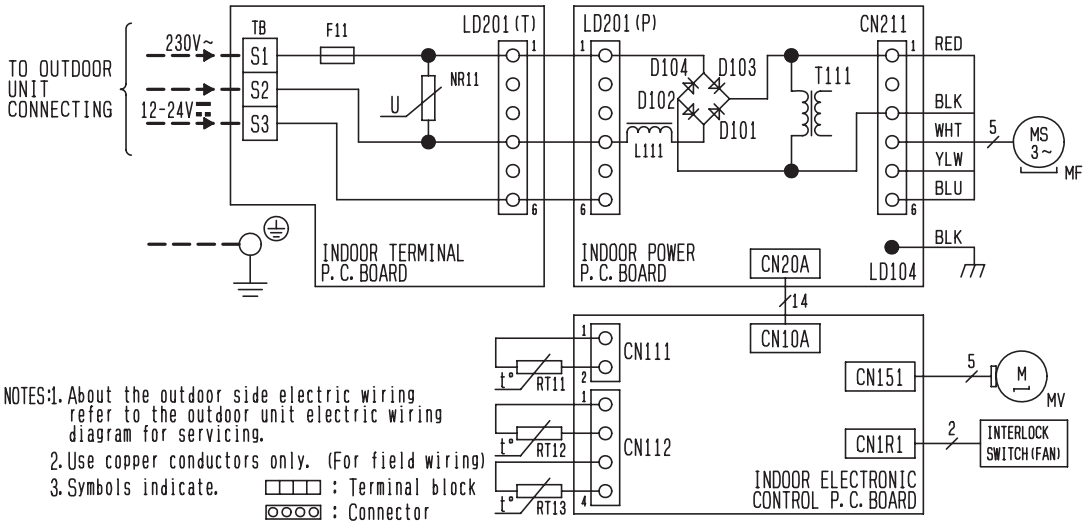
MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA



NOTES:1. About the outdoor side electric wiring refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols indicate. : Terminal block : Connector

SYMBOL	NAME
D101~D104	DIODE
F11	FUSE (T3.15AL250V)
MF	FAN MOTOR
MV	VANE MOTOR (HORIZONTAL)
NR11	VARISTOR
R111	RESISTOR (3.9Ω/5W)
RT11	ROOM TEMP. THERMISTOR
RT12	COIL TEMP. THERMISTOR (MAIN)
RT13	COIL TEMP. THERMISTOR (SUB)
T111	TRANSFORMER
TB	TERMINAL BLOCK

MSZ-GE42VA MSZ-GE50VA

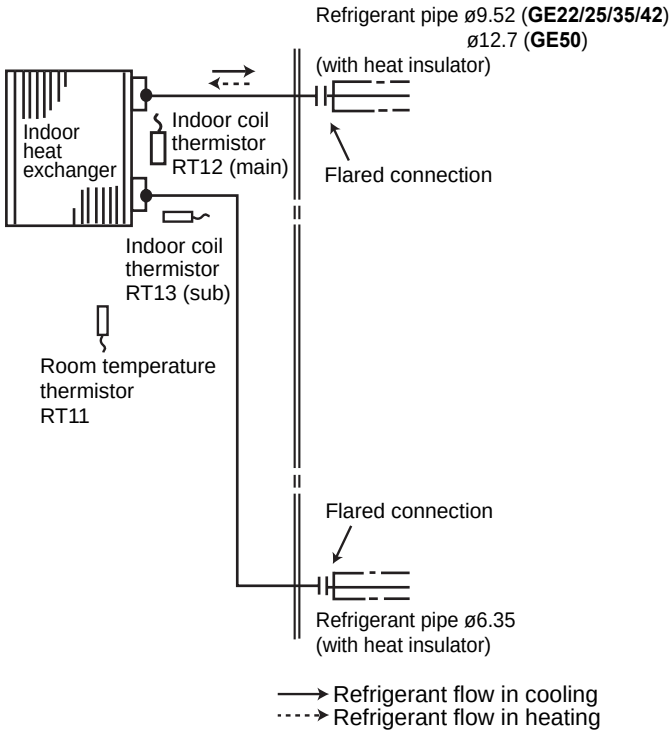


NOTES:1. About the outdoor side electric wiring refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols indicate. : Terminal block : Connector

SYMBOL	NAME
D101~D104	DIODE
F11	FUSE (T3.15AL250V)
L111	REACTOR
MF	FAN MOTOR
MV	VANE MOTOR (HORIZONTAL)
NR11	VARISTOR
RT11	ROOM TEMP. THERMISTOR
RT12	COIL TEMP. THERMISTOR (MAIN)
RT13	COIL TEMP. THERMISTOR (SUB)
T111	TRANSFORMER
TB	TERMINAL BLOCK

7 REFRIGERANT SYSTEM DIAGRAM

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA **Unit: mm**



8 SERVICE FUNCTIONS

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA

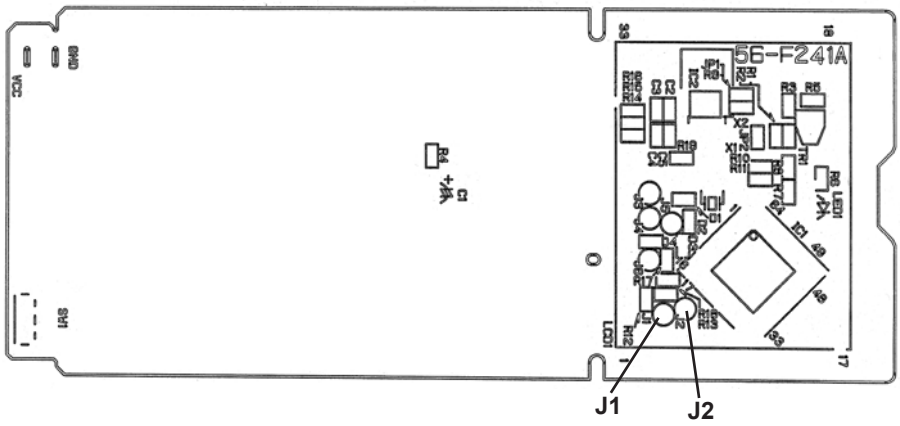
8-1. TIMER SHORT MODE

For service, set time can be shortened by short circuit of JPG and JPS on the electronic control P.C. board.
The time will be shortened as follows. (Refer to 10-7.2.)
Set time: 1 minute → 1 second
Set time: 3 minutes → 3 seconds (It takes 3 minutes for the compressor to start operation. However, the starting time is shortened by short circuit-of JPG and JPS.)

8-2. P.C. BOARD MODIFICATION FOR INDIVIDUAL OPERATION

A maximum of 4 indoor units with wireless remote controllers can be used in a room.
In this case, to operate each indoor unit individually by each remote controller, P.C. boards of remote controller must be modified according to the number of the indoor unit.

How to modify the remote controller P.C. board
Remove batteries before modification.
The board has a print as shown below:



NOTE: For modification, take out the batteries and press the OPERATE/STOP (ON/OFF) button twice or 3 times at first.
After modification, put back the batteries then press the RESET button.

The P.C. board has the print “J1” and “J2”. Solder “J1” and “J2” according to the number of indoor unit as shown in Table 1.
After modification, press the RESET button.

Table 1

	1 unit operation	2 units operation	3 units operation	4 units operation
No. 1 unit	No modification	Same as at left	Same as at left	Same as at left
No. 2 unit	—	Solder J1	Same as at left	Same as at left
No. 3 unit	—	—	Solder J2	Same as at left
No. 4 unit	—	—	—	Solder both J1 and J2

How to set the remote controller exclusively for particular indoor unit
After you turn the breaker ON, the first remote controller that sends the signal to the indoor unit will be regarded as the remote controller for the indoor unit.
The indoor unit will only accept the signal from the remote controller that has been assigned to the indoor unit once they are set.
The setting will be cancelled if the breaker is turned OFF, or the power supply is shut down.
Please conduct the above setting once again after the power has restored.

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8-3. AUTO RESTART FUNCTION

When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control P.C. board. “AUTO RESTART FUNCTION” automatically starts operation in the same mode just before the shutoff of the main power.

Operation

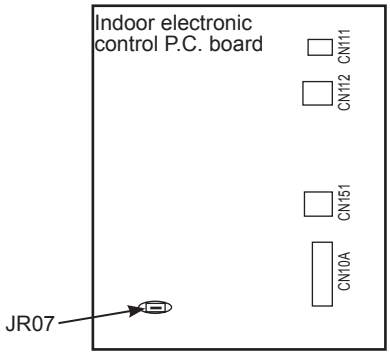
① If the main power has been cut, the operation settings remain.

② After the power is restored, the unit restarts automatically according to the memory.
(However, it takes at least 3 minutes for the compressor to start running.)

How to release “AUTO RESTART FUNCTION”

① Turn off the main power for the unit.

② Solder the jumper wire to JR07 on the indoor electronic control P.C. board. (Refer to 10-7.2.)



NOTE:

- The operation settings are memorized when 10 seconds have passed after the indoor unit was operated with the remote controller.
- If main power is turned OFF or a power failure occurs while AUTO START/STOP timer is active, the timer setting is cancelled.
- If the unit has been off with the remote controller before power failure, the auto restart function does not work as the power button of the remote controller is OFF.
- To prevent breaker OFF due to the rush of starting current, systematize other home appliance not to turn ON at the same time.
- When some air conditioners are connected to the same supply system, if they are operated before power failure, the starting current of all the compressors may flow simultaneously at restart.
  Therefore, the special counter-measures are required to prevent the main voltage-drop or the rush of the starting current by adding to the system that allows the units to start one by one.

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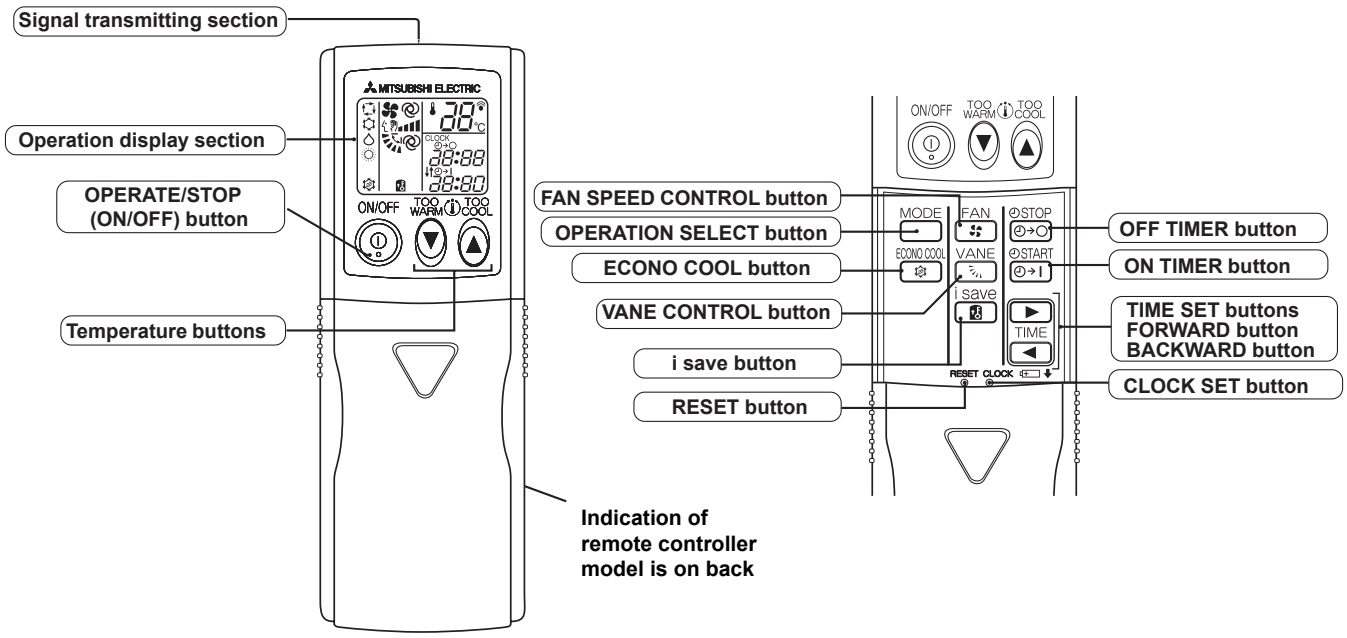
9 MICROPROCESSOR CONTROL

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA

WIRELESS REMOTE CONTROLLER



NOTE: Last setting will be stored after the unit is turned OFF with the remote controller. Indoor unit receives the signal of the remote controller with beeps.

INDOOR UNIT DISPLAY SECTION

Operation Indicator lamp

The operation indicator at the right side of the indoor unit indicates the operation state.

•The following indication applies regardless of shape of the indication.

Indication	Operation state	Room temperature
☀ ☀	The unit is operating to reach the set temperature	About 2°C or more away from set temperature
☀ ○	The room temperature is approaching the set temperature	About 1 to 2°C from set temperature
☀ ☼	Standby mode (Only during multi system operation)	—

☀ Lighted
☼ Blinking
○ Not lighted

9-1. COOL (☼) OPERATION

(1) Press OPERATE/STOP (ON/OFF) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select COOL mode with OPERATION SELECT button.
(3) Press TEMPERATURE buttons (TOO WARM or TOO COOL button) to select the desired temperature. The setting range is 16 - 31°C.

1. Coil frost prevention

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the coil from frosting.
When the temperature of indoor heat exchanger becomes too low, the coil frost prevention mode works.
The indoor fan operates at the set speed and the compressor stops. This mode continues until the temperature of indoor heat exchanger rises.

2. Low outside temperature operation

When the outside temperature is lower, low outside temperature operation starts, and the outdoor fan slows or stops.

9-2. DRY (△) OPERATION

(1) Press OPERATE/STOP (ON/OFF) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select DRY mode with OPERATION SELECT button.
(3) The set temperature is determined from the initial room temperature.

1. Coil frost prevention

Coil frost prevention is as same as COOL mode. (9-1.1.)

2. Low outside temperature operation

Low outside temperature operation is as same as COOL mode. (9-1.2.)

9-3. HEAT (☼) OPERATION

(1) Press OPERATE/STOP (ON/OFF) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
(2) Select HEAT mode with OPERATION SELECT button.
(3) Press TEMPERATURE buttons (TOO WARM or TOO COOL button) to select the desired temperature. The setting range is 16 - 31°C.

1. Cold air prevention control

When the compressor is not operating or is starting, and the temperature of indoor heat exchanger and/or the room temperature is low or when defrosting is being done, the indoor fan will stop or rotate in Very Low speed.

2. High pressure protection

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the condensing pressure from increasing excessively.
When the temperature of indoor heat exchanger becomes too high, the high pressure protection works.
The indoor fan operates following the cold air prevention control. This mode continues until the temperature of indoor heat exchanger falls.

3. Defrosting

Defrosting starts when the temperature of outdoor heat exchanger becomes too low.
The compressor stops once, the indoor/outdoor fans stop, the 4-way valve reverses, and the compressor re-starts.
This mode continues until the temperature of outdoor heat exchanger rises or the fixed time passes.

9-4. AUTO CHANGE OVER ··· AUTO MODE OPERATION

Once desired temperature is set, unit operation is switched automatically between COOL and HEAT operation.

Mode selection

(1) Initial mode
When unit starts the operation with AUTO operation from OFF:
- If the room temperature is higher than the set temperature, operation starts in COOL mode.
- If the room temperature is equal to or lower than the set temperature, operation starts in HEAT mode.

(2) Mode change
COOL mode changes to HEAT mode when about 15 minutes have passed with the room temperature 1°C below the set temperature.
HEAT mode changes to COOL mode when about 15 minutes have passed with the room temperature 1°C above the set temperature.

NOTE 1

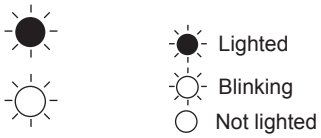
If two or more indoor units are operating in multi system, there might be a case that the indoor unit, which is operating in ⇄ (AUTO), cannot change over to the other operating mode (COOL ↔ HEAT) and becomes a state of standby.
Refer to **NOTE 2 "FOR MULTI SYSTEM AIR CONDITIONER"**.

NOTE 2
FOR MULTI SYSTEM AIR CONDITIONER
OUTDOOR UNIT: MXZ series

Multi system air conditioner can connect two or more indoor units with one outdoor unit.

- When you try to operate two or more indoor units with one outdoor unit simultaneously, one for the cooling and the others for heating, the operation mode of the indoor unit that operates earlier is selected. Other indoor units cannot operate, and operation indicator lamp flashes as shown in the figure below. In this case, please set all the indoor units to the same operation mode.

OPERATION INDICATOR



- When indoor unit starts the operation while the defrosting of outdoor unit is being done, it takes a few minutes (max. 10 minutes) to blow out the warm air.
- In the heating operation, though indoor unit that does not operate may get warm or the sound of refrigerant flowing may be heard, they are not malfunction. The reason is that the refrigerant continuously flows into it.

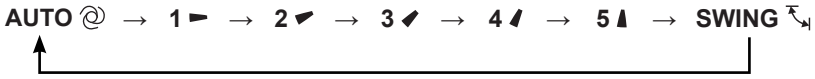
9-5. AUTO VANE OPERATION

1. Horizontal vane

(1) Vane motor drive

These models are equipped with a stepping motor for the horizontal vane. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approx. 12 V) transmitted from indoor microprocessor.

(2) The horizontal vane angle and mode change as follows by pressing VANE CONTROL button.



(3) Positioning

To confirm the standard position, the vane moves until it touches the vane stopper. Then the vane is set to the selected angle.

Confirming of standard position is performed in the following cases:

(a) When the operation starts or finishes (including timer operation).
(b) When the test run starts.
(c) When standby mode (only during multi system operation) starts or finishes.

(4) VANE AUTO mode

In VANE AUTO mode, the microprocessor automatically determines the vane angle to make the optimum room temperature distribution.

In COOL and DRY operation
Vane angle is fixed to Horizontal position.

In HEAT operation
Vane angle is fixed to Angle 5.

(5) STOP (operation OFF) and ON TIMER standby

In the following cases, the horizontal vane returns to the closed position.

(a) When OPERATE/STOP (ON/OFF) button is pressed (POWER OFF).
(b) When the operation is stopped by the emergency operation.
(c) When ON TIMER is ON standby.

(6) Dew prevention

During COOL or DRY operation with the vane angle at Angle 4 or 5 when the compressor cumulative operation time exceeds 1 hour, the vane angle automatically changes to Angle 1 for dew prevention.

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(7) SWING (↖↘) mode

By selecting SWING mode with VANE CONTROL button, the horizontal vane swings vertically.

(8) Cold air prevention in HEAT operation

The horizontal vane position is set to Upward.

NOTE: When 2 or more indoor units are operated with multi outdoor unit, even if any indoor unit turns thermostat off, this control doesn't work in the indoor unit.

(9) To change the airflow direction not to blow directly onto your body.

To change the airflow direction	When to use this function?	COOL/DRY	HEAT
Pressing and holding VANE CONTROL button for 2 seconds or more, the horizontal vane reverses and moves horizontal position. Horizontal position	Use this function if you don't want the air from the indoor unit to blow directly onto your body. • Depending on the shape of the room, the air may blow directly onto your body. • Press VANE CONTROL button again to return the vane to the previously-set position.	The air conditioner starts the cooling or drying operation approx. 3 minutes after the vane has moved to the horizontal position. • When VANE CONTROL button is pressed again, the vane returns to the previously-set position and the air conditioner starts the cool or dry operation in approx. 3 minutes.	The air conditioner starts heating operation approx. 3 minutes after the vane has moved to the horizontal position. • Sometimes the area around your feet may not warm. To warm the area around the feet, set the horizontal vane to (AUTO) or the downward-blowing position. • When VANE CONTROL button is pressed again, the vane returns to the previously-set position and the air conditioner starts the heat operation in approx. 3 minutes.

NOTE:

- If you make the airflow not to blow directly onto your body by pressing VANE CONTROL button, the compressor stops for 3 minutes even during the operation of the air conditioner.
- The air conditioner operates with Very Low speed until the compressor turns on again.

(10) ECONO COOL (🍃) operation (ECONOmical operation)

When ECONO COOL button is pressed in COOL mode, set temperature is automatically set 2°C higher.

Also the horizontal vane swings in various cycle.

SWING operation makes you feel cooler than set temperature. So, even though the set temperature is higher, the air conditioner can keep comfort. As a result, energy can be saved.

ECONO COOL operation is cancelled when ECONO COOL button is pressed once again or VANE CONTROL button is pressed or changed to other operation mode.

9-6. TIMER OPERATION

1. How to set the time

(1) Check that the current time is set correctly.

NOTE: Timer operation will not work without setting the current time. Initially “0:00” blinks at the current time display of TIME MONITOR, so set the current time correctly with CLOCK SET button.

How to set the current time

(a) Press the CLOCK set button.

(b) Press the TIME SET buttons (▶ and ◀) to set the current time.

- Each time FORWARD button (▶) is pressed, the set time increases by 1 minute, and each time BACKWARD button (◀) is pressed, the set time decreases by 1 minute.
- Pressing those buttons longer, the set time increases/decreases by 10 minutes.

(c) Press the CLOCK set button.

(2) Press OPERATE/STOP (ON/OFF) button to start the air conditioner.

(3) Set the time of timer.

ON timer setting

(a) Press ON TIMER button(START) during operation.

(b) Set the time of the timer using TIME SET buttons (▶ and ◀). ※

OFF timer setting

(a) Press OFF TIMER button (STOP) during operation.

(b) Set the time of the timer using TIME SET buttons (▶ and ◀). ※

※ Each time FORWARD button (▶) is pressed, the set time increases by 10 minutes: each time BACKWARD button (◀) is pressed, the set time decreases by 10 minutes.

2. To release the timer

To release ON timer, press ON TIMER button (START).

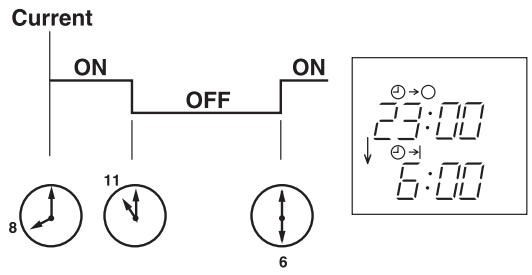
To release OFF timer, press OFF TIMER button(STOP).

TIMER is cancelled and the display of set time disappears.

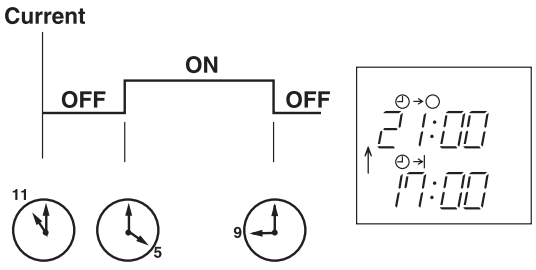
PROGRAM TIMER

- OFF timer and ON timer can be used in combination. The timer of the set time that is reached first will operate first.
- “ ↓ ” and “ ↑ ” display shows the order of OFF timer and ON timer operation.

(Example 1) The current time is 8:00 PM.
The unit turns off at 11:00 PM, and on at 6:00 AM.



(Example 2) The current time is 11:00 AM.
The unit turns on at 5:00 PM, and off at 9:00 PM.



NOTE: If the main power is turned off or a power failure occurs while ON/OFF timer is active, the timer setting is cancelled. As these models are equipped with an auto restart function, the air conditioner starts operating with timer cancelled when power is restored

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9-7. i-save (i-save) OPERATION

1. How to set i-save operation

(1) Press OPERATE/STOP (ON/OFF) button.
(2) Select COOL, HEAT or ECONO COOL mode.
(3) Press i-save button.
(4) Set the temperature, fan speed, and airflow direction for i-save operation.

NOTE:

- i-save operation cannot be selected during DRY or AUTO mode operation.
- The setting range of HEAT mode i-save operation is 10°C and 16 - 31°C.
- 2 groups of setting can be saved. (One for COOL/ECONO COOL, one for HEAT)

2. How to cancel operation

- Press i-save button again.
- i-save operation can also be cancelled by pressing OPERATION SELECT button to change the operation mode.

The same setting is select from the next time by simply pressing i-save button.

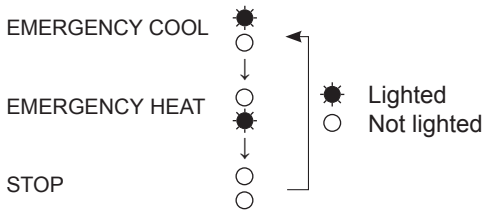
9-8. EMERGENCY/TEST OPERATION

In case of test run operation or emergency operation, use EMERGENCY OPERATION switch on the right side of the indoor unit. Emergency operation is available when the remote controller is missing, has failed or the batteries of the remote controller run down. The unit will start and OPERATION INDICATOR lamp will light.
The first 30 minutes of operation is the test run operation. This operation is for servicing. The indoor fan runs at High speed and the system is in continuous operation (The thermostat does not work).
After 30 minutes of test run operation, the system shifts to EMERGENCY COOL/HEAT MODE with a set temperature of 24°C. The fan speed shifts to Med.
In the test run or emergency operation, the horizontal vane operates in VANE AUTO (@) mode.
Emergency operation continues until EMERGENCY OPERATION switch is pressed once or twice or the unit receives any signal from the remote controller. In case of latter, normal operation will start.

Operation mode	COOL/HEAT
Set temperature	24°C
Fan speed	Med.
Horizontal vane	Auto

The operation mode is indicated by the Operation Indicator lamp as following

Operation Indicator lamp



NOTE: Do not press EMERGENCY OPERATION switch during normal operation.

9-9. 3-MINUTE TIME DELAY OPERATION

When the system turns OFF, compressor will not restart for 3 minutes as 3-minute time delay function operates to protect compressor from overload.

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10 TROUBLESHOOTING

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA

10-1. CAUTIONS ON TROUBLESHOOTING

1. Before troubleshooting, check the following

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and/or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the P.C. board.
3) When removing the P.C. board, hold the edge of the board with care NOT to apply stress on the components.
4) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

Lead wiring **Housing point**

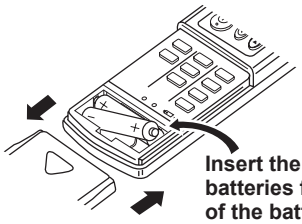
3. Troubleshooting procedure

1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing ON and OFF to indicate an abnormality.
   To make sure, check how many times the abnormality indication is flashing ON and OFF before starting service work.
2) Before servicing, check that the connector and terminal are connected properly.
3) If the P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) When troubleshooting, refer to 10-2., 10-3. and 10-4.

4. How to replace batteries

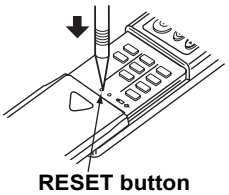
Weak batteries may cause the remote controller malfunction.
In this case, replace the batteries to operate the remote controller normally.

① Remove the front lid and insert batteries.
Then reattach the front lid.



Insert the negative pole of the batteries first. Check if the polarity of the batteries is correct.

② Press RESET button with a thin instrument, and then use the remote controller.



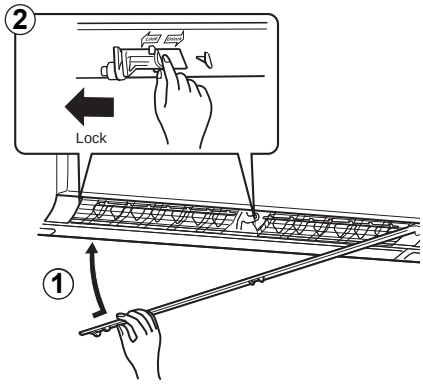
RESET button

NOTE: 1. If RESET button is not pressed, the remote controller may not operate correctly.
2. This remote controller has a circuit to automatically reset the microcomputer when batteries are replaced.
This function is equipped to prevent the microcomputer from malfunctioning due to the voltage drop caused by the battery replacement.

5. How to install the horizontal vane

If horizontal vane is not installed correctly, all of the operation indicator lamps will blink.
In this case, install the horizontal vane correctly by following the procedures ① to ②.

NOTE: Before installation of the horizontal vane, turn OFF the power supply.



In procedure ② lock the stoppers until they click into place.

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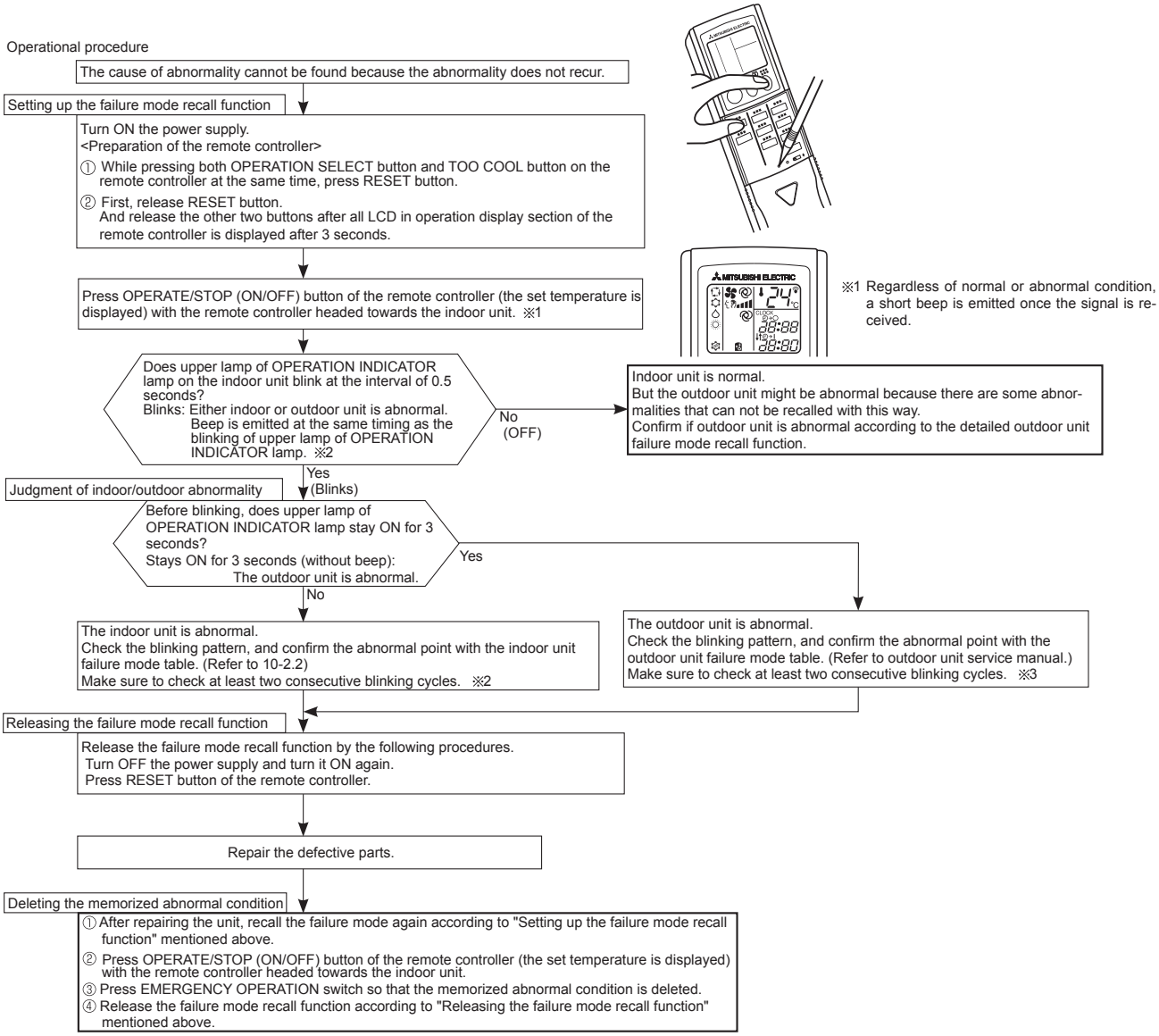
10-2. FAILURE MODE RECALL FUNCTION

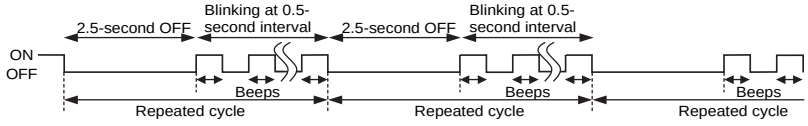
Outline of the function
This air conditioner can memorize the abnormal condition which has occurred once.
Even though LED indication listed on the troubleshooting check table (10-4.) disappears, the memorized failure details can be recalled.

1. Flow chart of failure mode recall function for the indoor/outdoor unit

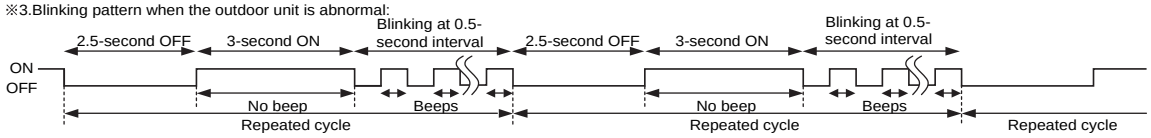

Operational procedure
The cause of abnormality cannot be found because the abnormality does not recur.
Setting up the failure mode recall function
Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
② First, release RESET button.
And release the other two buttons after all LCD in operation display section of the remote controller is displayed after 3 seconds.
Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1
※1 Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.
Does upper lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal.
Beep is emitted at the same timing as the blinking of upper lamp of OPERATION INDICATOR lamp. ※2
No (OFF)
Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that can not be recalled with this way.
Confirm if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function.
Yes (Blinks)
Judgment of indoor/outdoor abnormality
Before blinking, does upper lamp of OPERATION INDICATOR lamp stay ON for 3 seconds?
Stays ON for 3 seconds (without beep):
The outdoor unit is abnormal.
Yes
No
The indoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the indoor unit failure mode table. (Refer to 10-2.2)
Make sure to check at least two consecutive blinking cycles. ※2
The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table. (Refer to outdoor unit service manual.)
Make sure to check at least two consecutive blinking cycles. ※3
Releasing the failure mode recall function
Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.
Repair the defective parts.
Deleting the memorized abnormal condition
① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
② Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

NOTE: 1. Make sure to release the failure mode recall function once it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:



※3.Blinking pattern when the outdoor unit is abnormal:



2. Indoor unit failure mode table

Upper lamp of OPERATION INDICATOR lamp	Abnormal point (Failure mode)	Condition	Correspondence
Not lighted	Normal	—	—
1-time flash every 0.5-second	Room temperature thermistor	The room temperature thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the room temperature thermistor (10-7.2.).
2-time flash 2.5-second OFF	Indoor coil thermistor	The indoor coil thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the main indoor coil thermistor, the sub indoor coil thermistor (10-7.2.).
3-time flash 2.5-second OFF	Serial signal	The serial signal from outdoor unit is not received for a maximum of 6 minutes.	Refer to 10-6.Ⓓ "How to check miswiring and serial signal error".
11-time flash 2.5-second OFF	Indoor fan motor	The rotational frequency feedback signal is not emit during the 12 seconds the indoor fan operation.	Refer to 10-6.Ⓐ "Check of indoor fan motor".
12-time flash 2.5-second OFF	Indoor control system	It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	Replace the indoor electronic control P.C. board.

NOTE: Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (10-4.).

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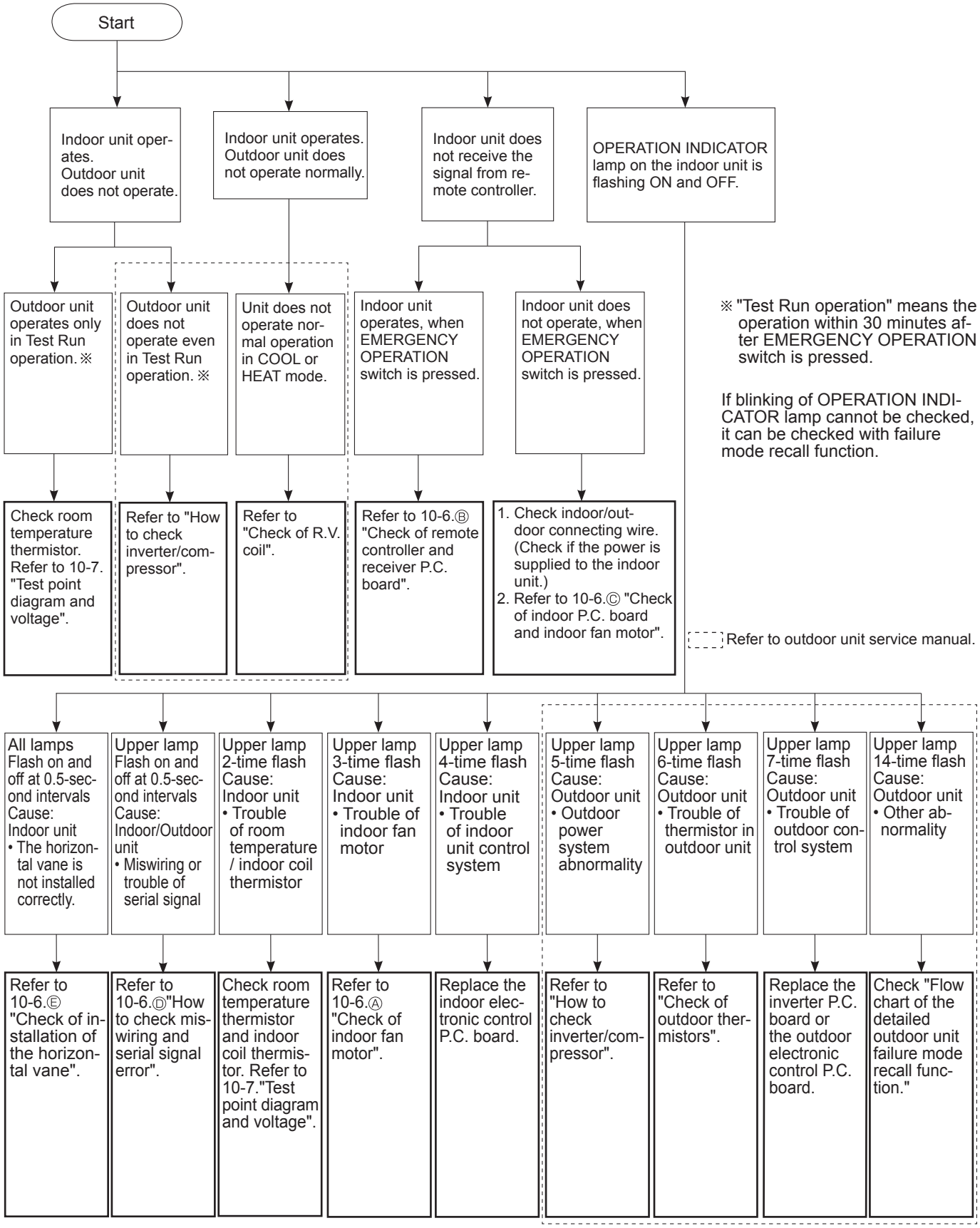
10-3. INSTRUCTION OF TROUBLESHOOTING


Start
Indoor unit operates. Outdoor unit does not operate.
Indoor unit operates. Outdoor unit does not operate normally.
Indoor unit does not receive the signal from remote controller.
OPERATION INDICATOR lamp on the indoor unit is flashing ON and OFF.
Outdoor unit operates only in Test Run operation. ※
Outdoor unit does not operate even in Test Run operation. ※
Unit does not operate normal operation in COOL or HEAT mode.
Indoor unit operates, when EMERGENCY OPERATION switch is pressed.
Indoor unit does not operate, when EMERGENCY OPERATION switch is pressed.
※ "Test Run operation" means the operation within 30 minutes after EMERGENCY OPERATION switch is pressed.
If blinking of OPERATION INDICATOR lamp cannot be checked, it can be checked with failure mode recall function.
Check room temperature thermistor. Refer to 10-7. "Test point diagram and voltage".
Refer to "How to check inverter/compressor".
Refer to "Check of R.V. coil".
Refer to 10-6.Ⓑ "Check of remote controller and receiver P.C. board".
1. Check indoor/outdoor connecting wire. (Check if the power is supplied to the indoor unit.)
2. Refer to 10-6.Ⓒ "Check of indoor P.C. board and indoor fan motor".
Refer to outdoor unit service manual.
All lamps Flash on and off at 0.5-second intervals Cause: Indoor unit • The horizontal vane is not installed correctly.
Upper lamp Flash on and off at 0.5-second intervals Cause: Indoor/Outdoor unit • Miswiring or trouble of serial signal
Upper lamp 2-time flash Cause: Indoor unit • Trouble of room temperature / indoor coil thermistor
Upper lamp 3-time flash Cause: Indoor unit • Trouble of indoor fan motor
Upper lamp 4-time flash Cause: Indoor unit • Trouble of indoor unit control system
Upper lamp 5-time flash Cause: Outdoor unit • Outdoor power system abnormality
Upper lamp 6-time flash Cause: Outdoor unit • Trouble of thermistor in outdoor unit
Upper lamp 7-time flash Cause: Outdoor unit • Trouble of outdoor control system
Upper lamp 14-time flash Cause: Outdoor unit • Other abnormality
Refer to 10-6.Ⓔ "Check of installation of the horizontal vane".
Refer to 10-6.Ⓓ"How to check miswiring and serial signal error".
Check room temperature thermistor and indoor coil thermistor. Refer to 10-7."Test point diagram and voltage".
Refer to 10-6.Ⓐ "Check of indoor fan motor".
Replace the indoor electronic control P.C. board.
Refer to "How to check inverter/compressor".
Refer to "Check of outdoor thermistors".
Replace the inverter P.C. board or the outdoor electronic control P.C. board.
Check "Flow chart of the detailed outdoor unit failure mode recall function."

10-4. TROUBLESHOOTING CHECK TABLE

Before taking measures, make sure that the symptom reappears for accurate troubleshooting.
When the indoor unit has started operation and detected an abnormality of the following condition (the first detection after the power ON), the indoor fan motor turns OFF and OPERATION INDICATOR lamp flashes.

OPERATION INDICATOR

☼ ○

● Lighted
☼ Blinking
○ Not lighted

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	Miswiring or serial signal	Upper lamp flashes. 0.5-second ON ●○●○●○○ 0.5-second OFF	Indoor unit and outdoor unit do not operate.	The serial signal from the outdoor unit is not received for 6 minutes.	• Refer to 10-6. Ⓓ "How to check miswiring and serial signal error".
2	Indoor coil thermistor Room temperature thermistor	Upper lamp flashes. 2-time flash ●○●○○○○○●○●○○ 2.5-second OFF		The indoor coil or the room temperature thermistor is short or open circuit.	• Refer to 10-7. the characteristics of indoor coil thermistor, and the room temperature thermistor.
3	Indoor fan motor	Upper lamp flashes. 3-time flash ●○●○●○○○○○●○●○●○○○ 2.5-second OFF		The rotational frequency feedback signal is not emitted during the indoor fan operation.	• Refer to 10-6. Ⓐ "Check of indoor fan motor".
4	Indoor control system	Upper lamp flashes. 4-time flash ●○●○●○●○○○○○●○●○●○● 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	• Replace the indoor electronic control P.C. board.
5	Outdoor power system	Upper lamp flashes. 5-time flash ●○●○●○●○●○○○○○●○●○ 2.5-second OFF		It consecutively occurs 3 times that the compressor stops for overcurrent protection or start-up failure protection within 1 minute after start-up.	• Refer to "How to check of inverter/compressor". Refer to outdoor unit service manual • Check the stop valve.
6	Outdoor thermistors	Upper lamp flashes. 6-time flash ●○●○●○●○●○●○○○○○●○ 2.5-second OFF		The outdoor thermistors short or open circuit during the compressor operation.	• Refer to "Check of outdoor thermistor". Refer to outdoor unit service manual.
7	Outdoor control system	Upper lamp flashes. 7-time flash ●○●○●○●○●○●○●○○○○○● 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Replace the inverter P.C. board or the outdoor electronic control P.C. board. Refer to outdoor unit service manual.
8	Other abnormality	Upper lamp flashes. 14-time flash ●○●○●○●○●○●○●○●○●○●○● ○●○●○●○○○○○● 2.5-second OFF		An abnormality other than above mentioned is detected.	• Check the stop valve. • Confirm the abnormality in detail using the failure mode recall function for outdoor unit.
9	Outdoor control system	Upper lamp lights up ●	Outdoor unit does not operate	It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Check the blinking pattern of the LED on the inverter P.C. board or the outdoor electronic control P.C. board.

OPERATION INDICATOR

☼
☼

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	Attachment of the horizontal vane	All lamps flash at the same time. 0.5-second ON ●○●○●○●○ 0.5-second OFF	Indoor unit and outdoor unit do not operate.	The electricity is not conducted to the interlock switch (Fan) of the horizontal vane.	• Refer to 10-6. Ⓔ "Check of installation of the horizontal vane".

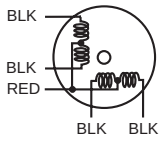
OPERATION INDICATOR

●
☼

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	**MXZ type** Operation mode setting	Upper lamp lights and lower lamp flashes. ●○○○○○●○○○○○● 2.5-second OFF	Outdoor unit operates but indoor unit does not operate.	The operation mode of the each indoor unit is differently set to COOL (includes DRY) and HEAT at the same time, the operation mode of the indoor unit that has operated at first has the priority.	• Unify the operation mode. Refer to outdoor unit service manual.

10-5. TROUBLE CRITERION OF MAIN PARTS

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA

Part name	Check method and criterion	Figure
Room temperature thermistor (RT11) Indoor coil thermistor (RT12, RT13)	Measure the resistance with a tester. Refer to 10-7. "Test point diagram and voltage", "2. Indoor electronic control P.C. board", the chart of thermistor.	
Indoor fan motor (MF)	Check 10-6.Ⓐ	
Vane motor (MV)	Measure the resistance between the terminals with a tester. (Temperature: 10 - 30°C) Color of the lead wire: RED - BLK Normal: 223 - 268 Ω	

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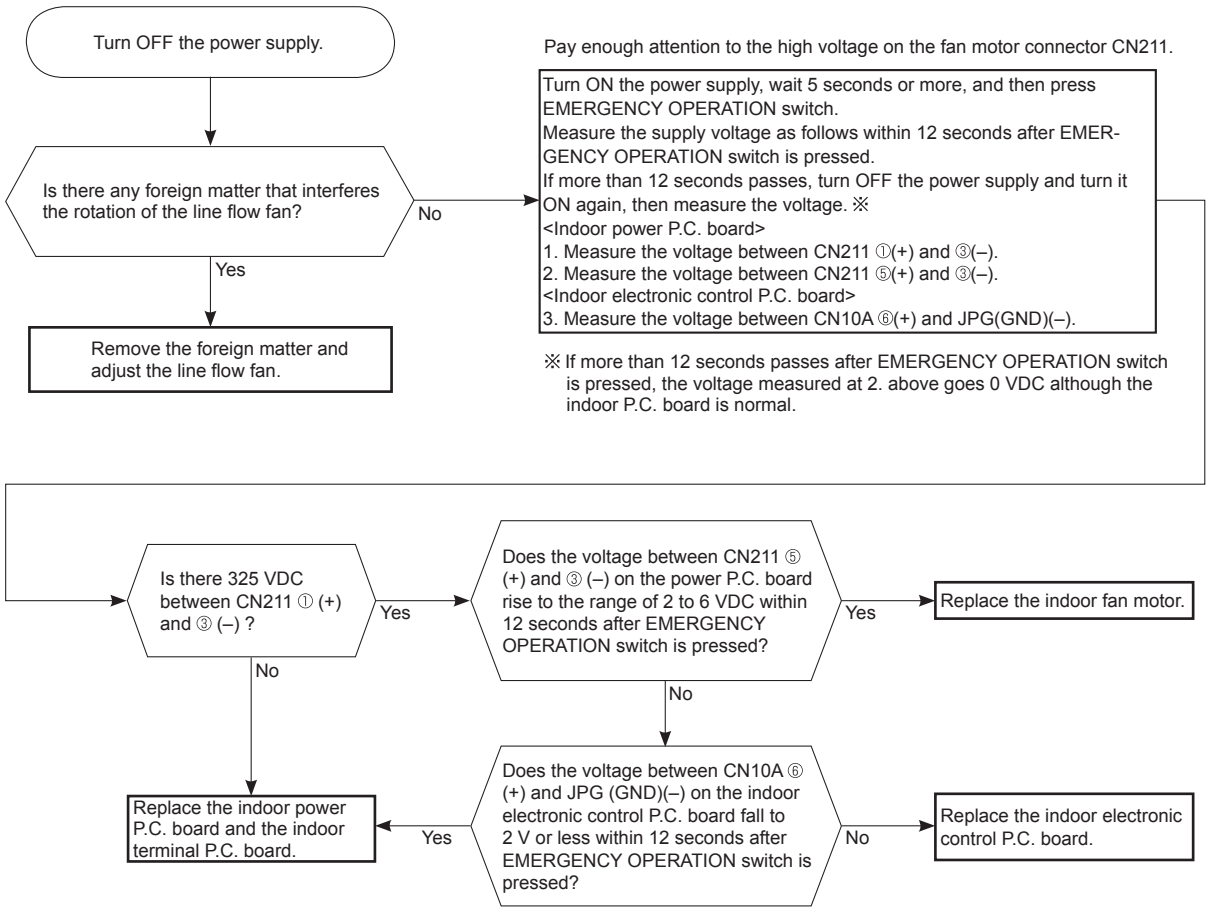
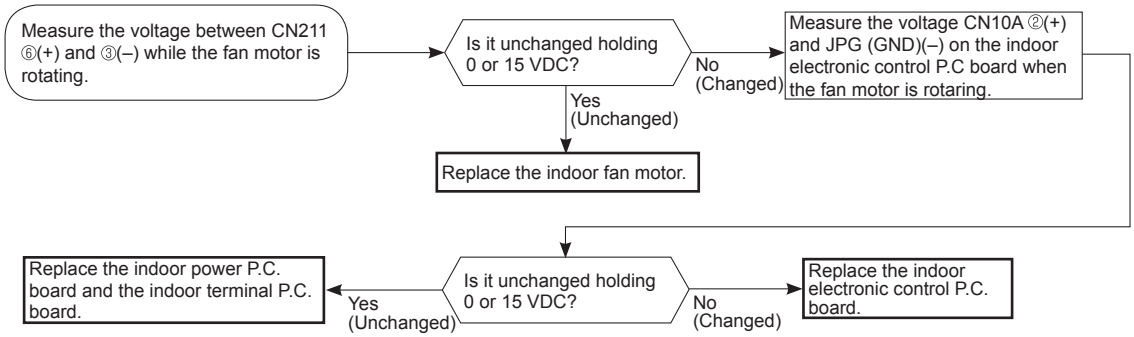
10-6. TROUBLESHOOTING FLOW

Ⓐ Check of indoor fan motor

The indoor fan motor error has occurred, and the indoor fan does not operate.


Turn OFF the power supply.
Is there any foreign matter that interferes the rotation of the line flow fan?
No
Yes
Remove the foreign matter and adjust the line flow fan.
Pay enough attention to the high voltage on the fan motor connector CN211.
Turn ON the power supply, wait 5 seconds or more, and then press EMERGENCY OPERATION switch.
Measure the supply voltage as follows within 12 seconds after EMERGENCY OPERATION switch is pressed.
If more than 12 seconds passes, turn OFF the power supply and turn it ON again, then measure the voltage. ※
<Indoor power P.C. board>
1. Measure the voltage between CN211 ①(+) and ③(–).
2. Measure the voltage between CN211 ⑤(+) and ③(–).
<Indoor electronic control P.C. board>
3. Measure the voltage between CN10A ⑥(+) and JPG(GND)(–).
※ If more than 12 seconds passes after EMERGENCY OPERATION switch is pressed, the voltage measured at 2. above goes 0 VDC although the indoor P.C. board is normal.
Is there 325 VDC between CN211 ① (+) and ③ (–) ?
Yes
No
Does the voltage between CN211 ⑤ (+) and ③ (–) on the power P.C. board rise to the range of 2 to 6 VDC within 12 seconds after EMERGENCY OPERATION switch is pressed?
Yes
Replace the indoor fan motor.
No
Does the voltage between CN10A ⑥ (+) and JPG (GND)(–) on the indoor electronic control P.C. board fall to 2 V or less within 12 seconds after EMERGENCY OPERATION switch is pressed?
Yes
Replace the indoor power P.C. board and the indoor terminal P.C. board.
No
Replace the indoor electronic control P.C. board.

The indoor fan motor error has occurred, and the indoor fan repeats "12-second ON and 30-second OFF" 3 times, and then stops.


Measure the voltage between CN211 ⑥(+) and ③(–) while the fan motor is rotating.
Is it unchanged holding 0 or 15 VDC?
No (Changed)
Measure the voltage CN10A ②(+) and JPG (GND)(–) on the indoor electronic control P.C board when the fan motor is rotaring.
Yes (Unchanged)
Replace the indoor fan motor.
Replace the indoor power P.C. board and the indoor terminal P.C. board.
Yes (Unchanged)
Is it unchanged holding 0 or 15 VDC?
No (Changed)
Replace the indoor electronic control P.C. board.

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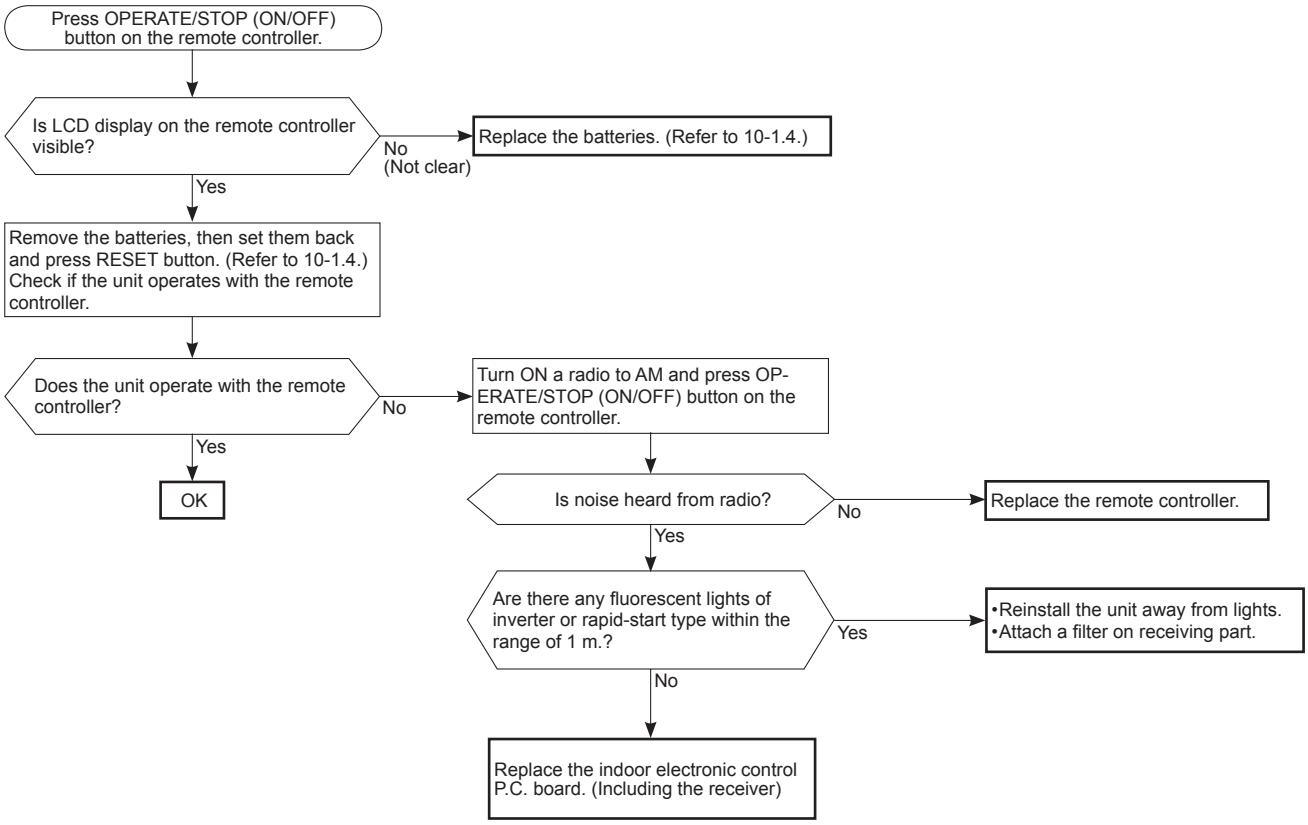
Ⓑ Check of remote controller and indoor electronic control P.C. board

※Check if the remote controller is exclusive for this air conditioner.


Press OPERATE/STOP (ON/OFF) button on the remote controller.
Is LCD display on the remote controller visible?
No (Not clear)
Replace the batteries. (Refer to 10-1.4.)
Yes
Remove the batteries, then set them back and press RESET button. (Refer to 10-1.4.) Check if the unit operates with the remote controller.
Does the unit operate with the remote controller?
No
Turn ON a radio to AM and press OPERATE/STOP (ON/OFF) button on the remote controller.
Yes
OK
Is noise heard from radio?
No
Replace the remote controller.
Yes
Are there any fluorescent lights of inverter or rapid-start type within the range of 1 m.?
Yes
•Reinstall the unit away from lights.
•Attach a filter on receiving part.
No
Replace the indoor electronic control P.C. board. (Including the receiver)

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Ⓒ Check of indoor P.C. board and indoor fan motor

Turn OFF the power supply.
Remove indoor fan motor connector CN211 from indoor power P.C. board and vane motor connector CN151 from the indoor electronic control P.C. board and turn ON the power supply.

Does the unit operate with the remote controller?
Does OPERATION INDICATOR lamp light up by pressing EMERGENCY OPERATION switch?

Yes → Measure the resistance of indoor fan motor.
Refer to 10-5

→ Short circuit:
Replace the indoor fan motor.

Yes → Measure the resistance of the vane motor coil.
Refer to 10-5.

→ Short circuit:
Replace the vane motor and the indoor electronic control P.C. board.

No

Turn OFF the power supply.
Check both “parts side” and “pattern side” of the indoor terminal P.C. board visually.

Be sure to check both the fuse and the varistor in any case.

Is the varistor (NR11) burnt and the fuse (F11) blown?

No

Yes → Replace the varistor (NR11) and fuse (F11). ※3

Is the fuse (F11) blown only?

No

Yes

Measure the resistance between CN211 ①(+) and ③(-) of indoor fan motor connector. ※1, ※2

※1. The fan motor connector's ① lead wire is red, whereas ③ is black.
※2. Connect "+" of the tester to fan motor connector's ① lead wire, and “-” to ③ lead wire, otherwise the resistance cannot be measured properly.
※3. Please replace the fuse after removing the indoor terminal P.C. board from the electrical box.

Is the resistance 1MΩ or more?

No → Replace the fuse (F11) and the indoor fan motor. ※3

Yes → Replace the fuse (F11). ※3

Measure the resistance of resistor (R111) on the indoor power P.C. board. (**GE22/25/35**)
Measure the resistance of reactor (L111) on the indoor power P.C. board. (**GE42/50**)

Is the resistance of resistor (R111) approx. 4 Ω? (**GE22/25/35**)
Is the resistance of reactor (L111) approx. 2.2 Ω? (**GE42/50**)

No → Replace the indoor power P.C. board, the indoor terminal P.C. board and the indoor fan motor.

Yes

Is the approx. 5 VDC between 5 V (+) and JPG (GND) (-) of the indoor electronic control P.C. board? Is there approx. 9 V to 13 VDC between 12 V (+) and JPG (GND) (-) of the indoor electronic control P.C. board.

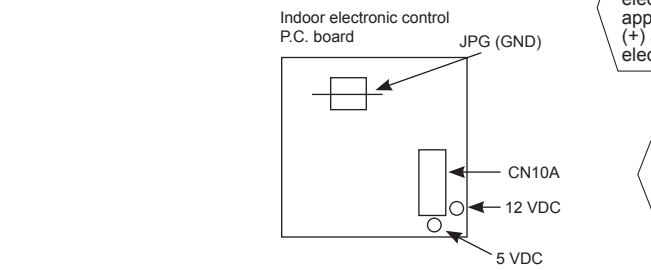
Yes → Replace the indoor fan motor.

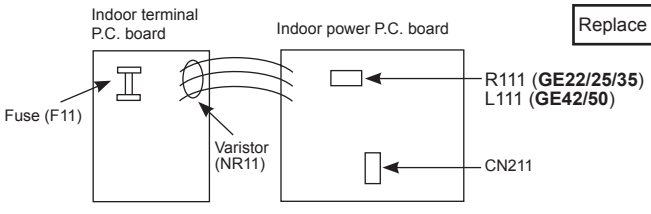
No

Are connector CN10A on the indoor electronic control P.C. board or lead wires disconnected?

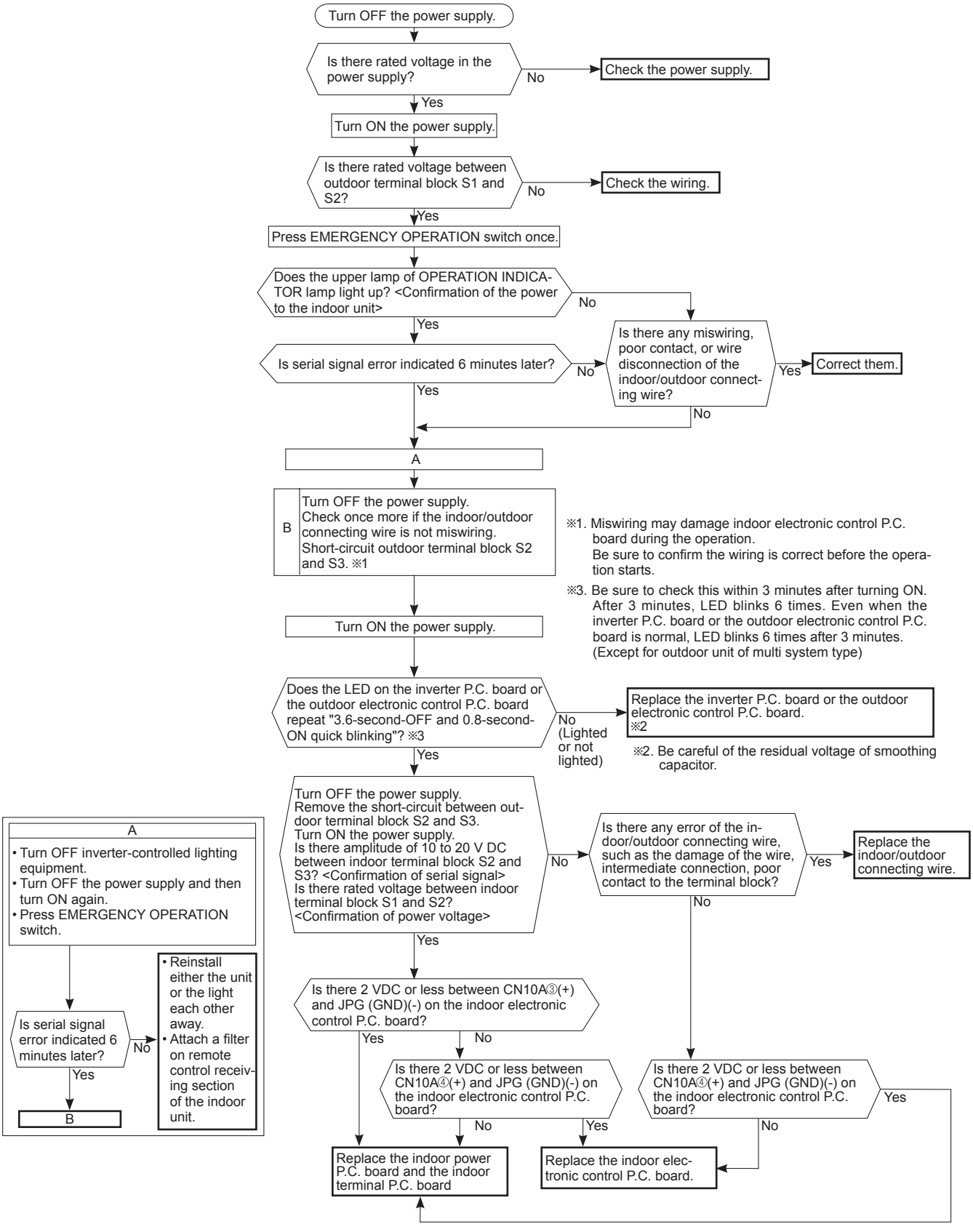
Yes → Connect the connector or repair disconnection.

No → Replace the indoor electronic control P.C. board.





Ⓓ How to check miswiring and serial signal error


Turn OFF the power supply.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Turn ON the power supply.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check the wiring.
Yes
Press EMERGENCY OPERATION switch once.
Does the upper lamp of OPERATION INDICATOR lamp light up? <Confirmation of the power to the indoor unit>
No
Yes
Is serial signal error indicated 6 minutes later?
No
Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
Yes
Correct them.
Yes
No
A
B
Turn OFF the power supply.
Check once more if the indoor/outdoor connecting wire is not miswiring.
Short-circuit outdoor terminal block S2 and S3. ※1
Turn ON the power supply.
Does the LED on the inverter P.C. board or the outdoor electronic control P.C. board repeat "3.6-second-OFF and 0.8-second-ON quick blinking"? ※3
No (Lighted or not lighted)
Replace the inverter P.C. board or the outdoor electronic control P.C. board. ※2
Yes
Turn OFF the power supply.
Remove the short-circuit between outdoor terminal block S2 and S3.
Turn ON the power supply.
Is there amplitude of 10 to 20 V DC between indoor terminal block S2 and S3? <Confirmation of serial signal>
Is there rated voltage between indoor terminal block S1 and S2? <Confirmation of power voltage>
No
Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
Yes
Replace the indoor/outdoor connecting wire.
No
Yes
Is there 2 VDC or less between CN10A③(+) and JPG (GND)(-) on the indoor electronic control P.C. board?
Yes
No
Is there 2 VDC or less between CN10A④(+) and JPG (GND)(-) on the indoor electronic control P.C. board?
No
Yes
Replace the indoor power P.C. board and the indoor terminal P.C. board
Is there 2 VDC or less between CN10A④(+) and JPG (GND)(-) on the indoor electronic control P.C. board?
Yes
No
Replace the indoor electronic control P.C. board.
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light each other away.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B

※1. Miswiring may damage indoor electronic control P.C. board during the operation.
Be sure to confirm the wiring is correct before the operation starts.

※3. Be sure to check this within 3 minutes after turning ON. After 3 minutes, LED blinks 6 times. Even when the inverter P.C. board or the outdoor electronic control P.C. board is normal, LED blinks 6 times after 3 minutes. (Except for outdoor unit of multi system type)

※2. Be careful of the residual voltage of smoothing capacitor.

Be sure to release the failure-mode recall function after checking.

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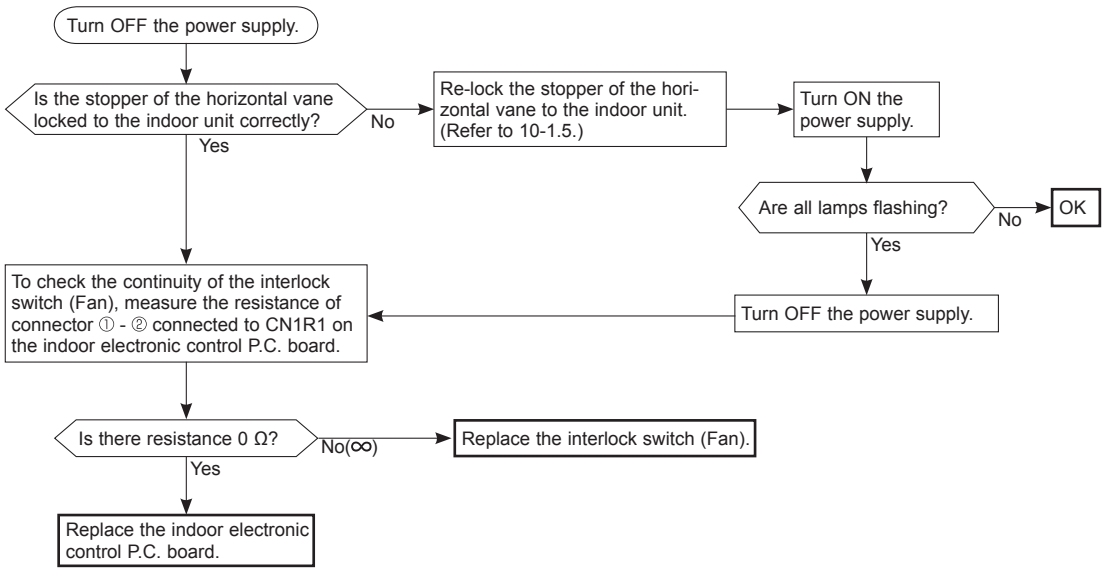
Ⓔ Check of installation of the horizontal vane


Turn OFF the power supply.
Is the stopper of the horizontal vane locked to the indoor unit correctly?
No
Re-lock the stopper of the horizontal vane to the indoor unit. (Refer to 10-1.5.)
Turn ON the power supply.
Are all lamps flashing?
No
OK
Yes
Turn OFF the power supply.
Yes
To check the continuity of the interlock switch (Fan), measure the resistance of connector ① - ② connected to CN1R1 on the indoor electronic control P.C. board.
Is there resistance 0 Ω?
No(∞)
Replace the interlock switch (Fan).
Yes
Replace the indoor electronic control P.C. board.

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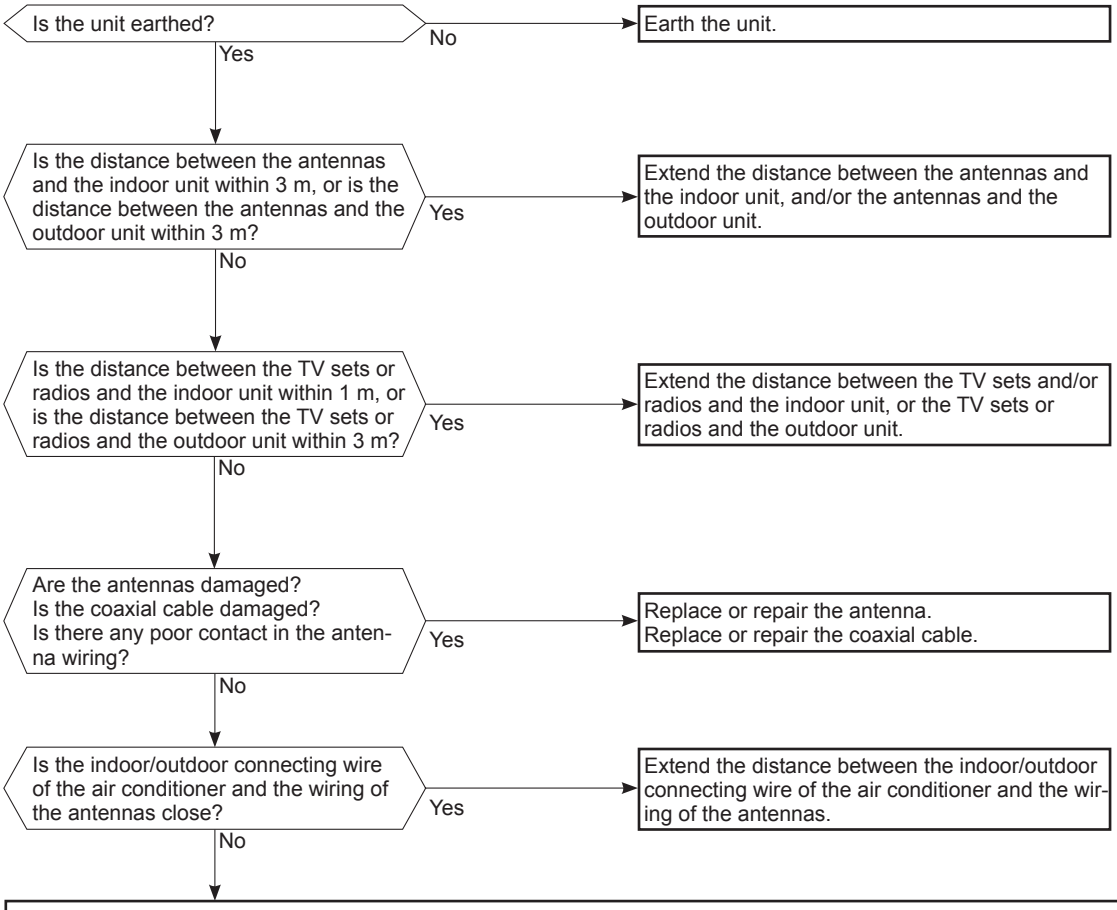
Ⓕ Electromagnetic noise enters into TV sets or radios


Is the unit earthed?
No
Earth the unit.
Yes
Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m?
Yes
Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.
No
Is the distance between the TV sets or radios and the indoor unit within 1 m, or is the distance between the TV sets or radios and the outdoor unit within 3 m?
Yes
Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.
No
Are the antennas damaged?
Is the coaxial cable damaged?
Is there any poor contact in the antenna wiring?
Yes
Replace or repair the antenna.
Replace or repair the coaxial cable.
No
Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?
Yes
Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
No

Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the following before asking for service.

1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

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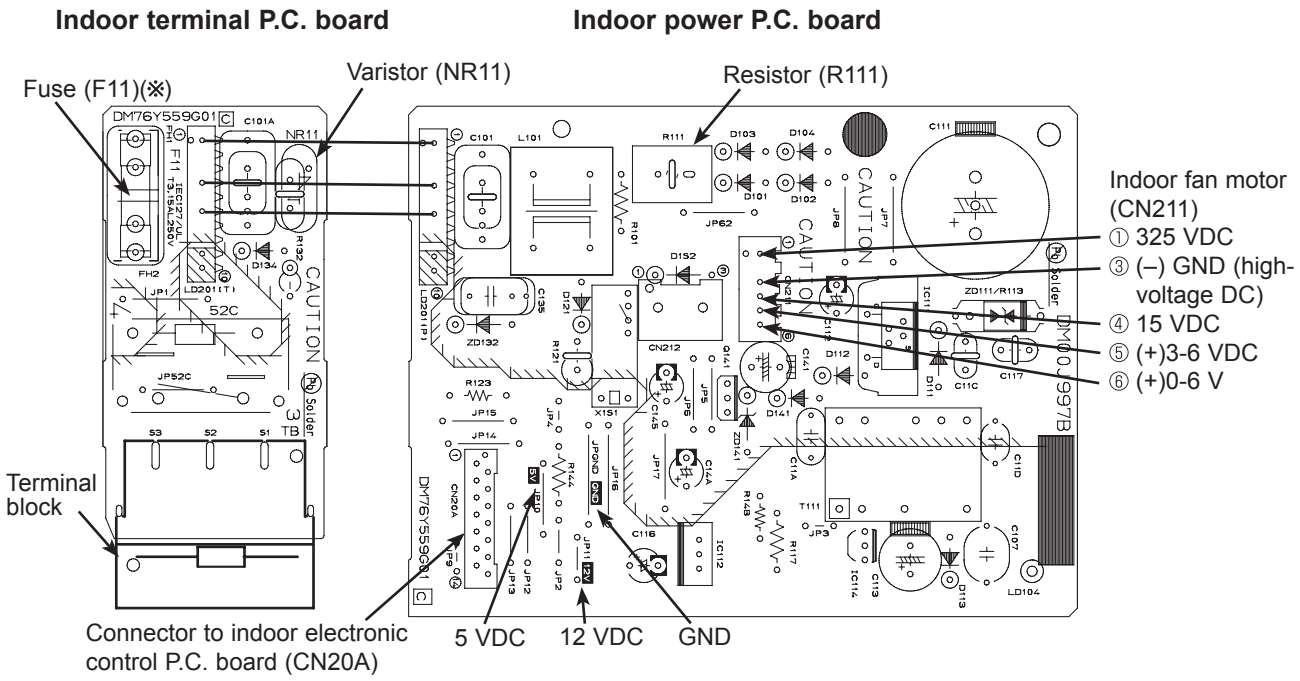
10-7. Test point diagram and voltage

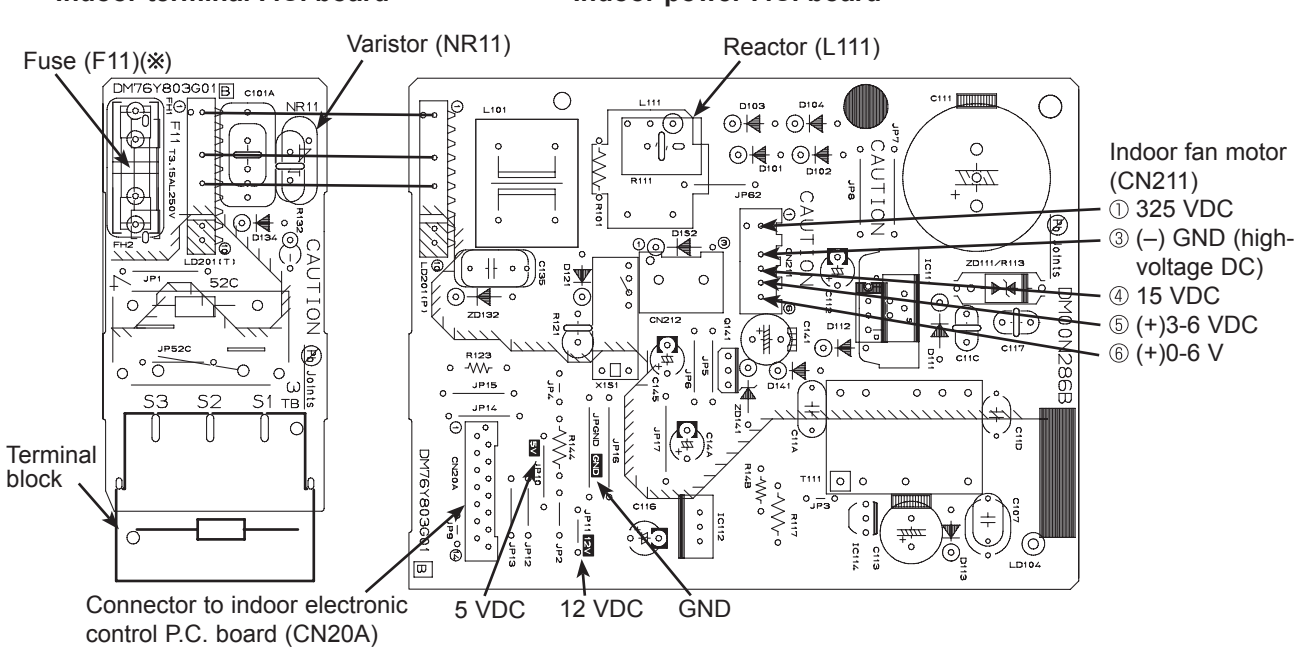
1. Indoor power P.C. board, Indoor terminal P.C. board

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA



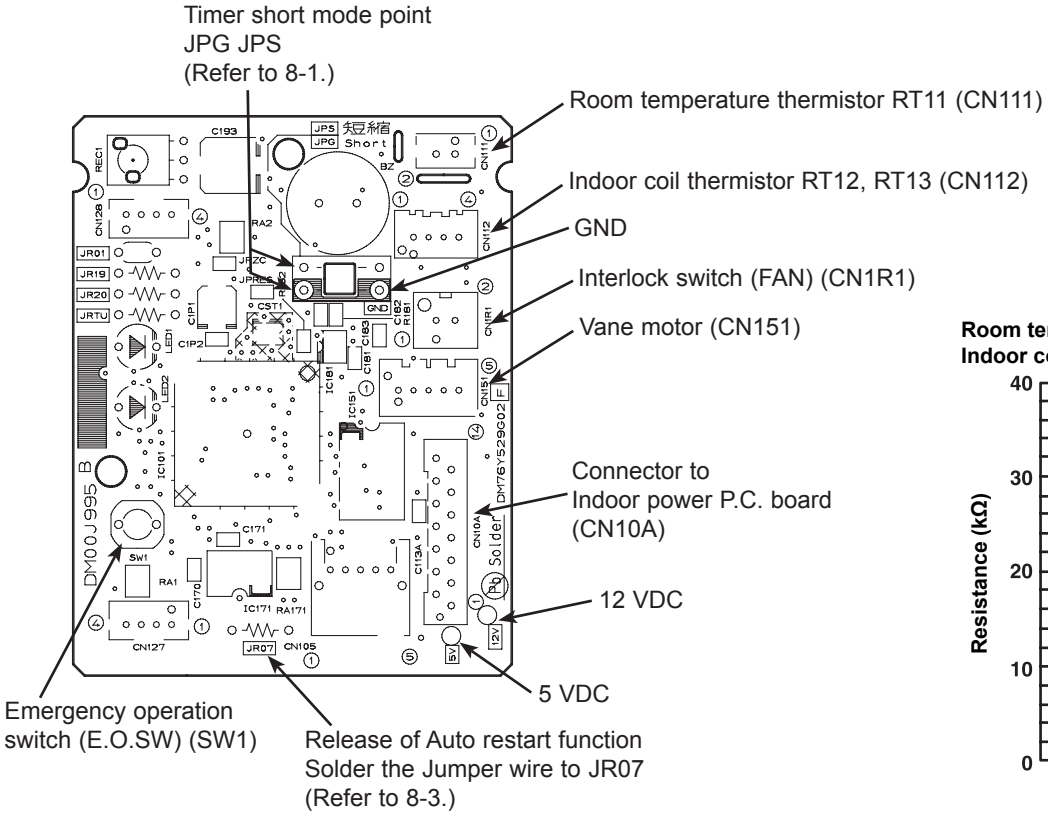
※ Please replace the fuse after removing the indoor terminal P.C. board from the electrical box.

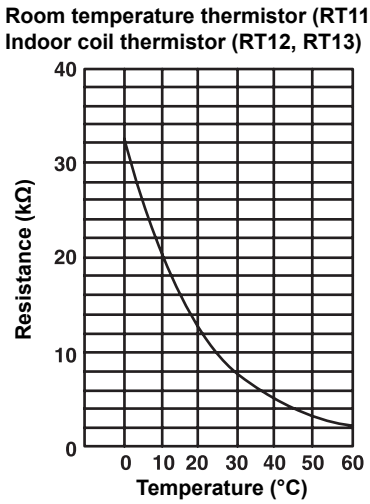
MSZ-GE42VA MSZ-GE50VA



※ Please replace the fuse after removing the indoor terminal P.C. board from the electrical box.

2. Indoor electronic control P.C. board



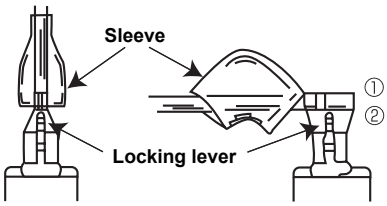


11 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

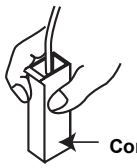
The terminal which has the locking mechanism can be detached as shown below.
There are two types (refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

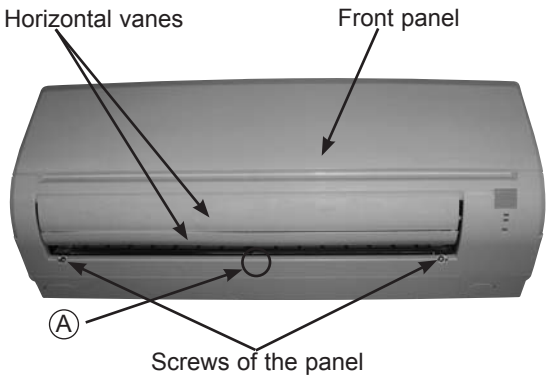
(2) The terminal with this connector has the locking mechanism.

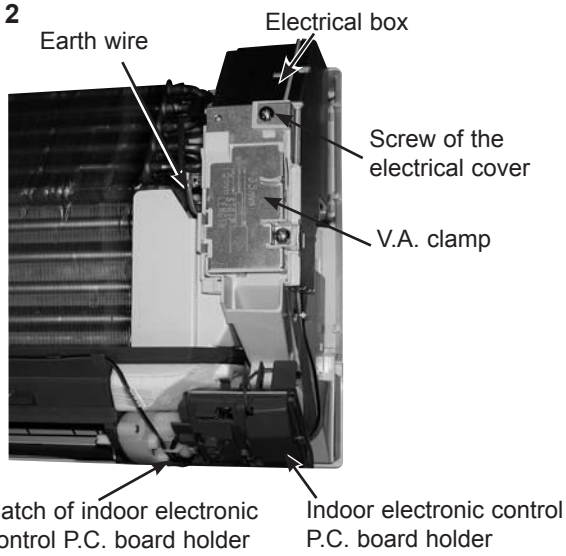
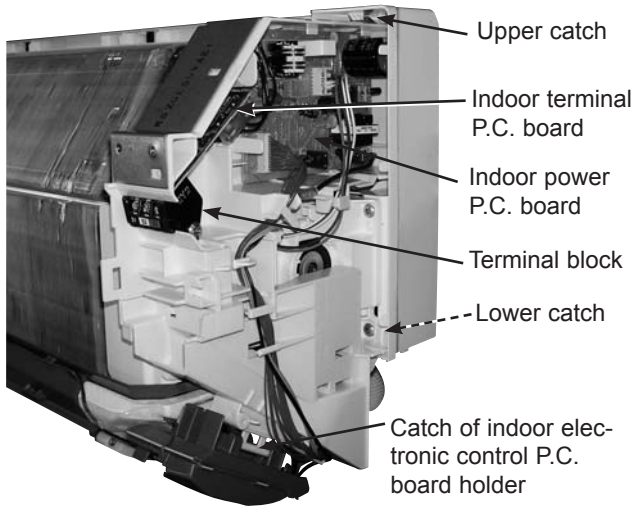


①Hold the sleeve, and pull out the terminal slowly.

MSZ-GE22VA MSZ-GE25VA MSZ-GE35VA MSZ-GE42VA MSZ-GE50VA

NOTE: Turn OFF power supply before disassembling.

OPERATING PROCEDURE	PHOTOS
1. Removing the panel (1) Remove the horizontal vanes. (2) Remove the screw caps of the panel. Remove the screws of the panel. (3) Unhook the lower part (Ⓐ) of the panel. (4) Hold the lower part of both ends of the panel and pull it slightly toward you, and then remove the panel by pushing it upward.	**Photo 1** 

OPERATING PROCEDURE	PHOTOS
2. Removing the indoor electronic control P.C. board and the room temperature thermistor (1) Remove the panel (refer to 1.) and the corner box. (2) Remove the screw of the V.A. clamp. Remove the V.A. clamp and the indoor/outdoor connecting wire. (3) Open the indoor electronic control P.C. board holder (to right side) (4) Disconnect the following connectors: <Indoor electronic control P.C. board> CN112 (Indoor coil thermistor) CN151 (Vane motor) CN1R1 (Interlock switch) CN10A (To the indoor power P.C. board) (5) Unhook the catches of the indoor electronic control P.C. board holder from the nozzle and the electrical box (right side). (6) Remove the room temperature thermistor from the hook of the indoor electronic control P.C. board holder. (7) Open the back side of the indoor electronic control P.C. board holder, and remove the indoor electronic control P.C. board. (8) Remove the room temperature thermistor from the indoor electronic control P.C. board	**Photo 2** 
3. Remove the indoor power P.C. board, the indoor terminal P.C. board, and the electrical box (1) Remove the panel (refer to 1.) and the corner box. (2) Remove the indoor/outdoor connecting wire. (Refer to 2.) (3) Remove the earth wire connected to the indoor heat exchanger from the electrical box. (4) Unhook first the lower, then the upper catches of the electrical box, and pull out the electrical box. (5) Remove the screw of the electrical cover and remove the electrical cover. (6) Disconnect all the connectors on the indoor power P.C. board and unhook all lead wires. (7) Remove the screw of terminal block on the indoor terminal P.C. board. (8) Remove the indoor power P.C. board and the indoor terminal P.C. board.	**Photo 3** 

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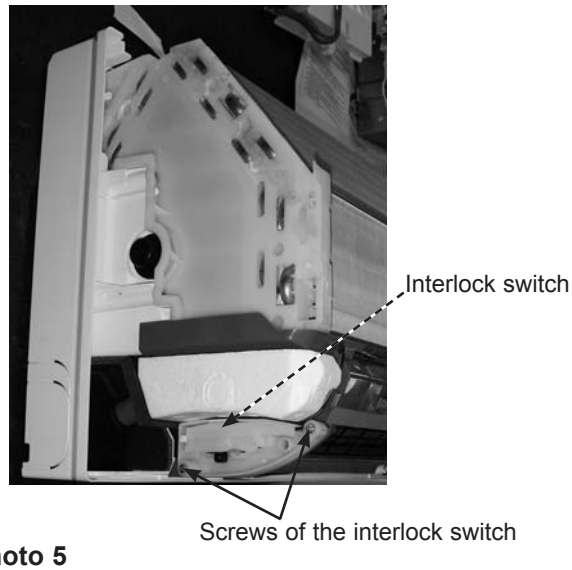
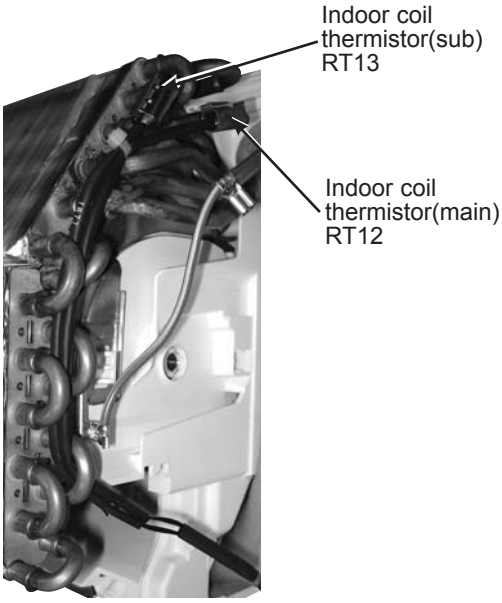
OPERATING PROCEDURE	PHOTOS
4. Removing the nozzle assembly (1) Remove the panel (refer to 1.) and the corner box. (2) Remove the indoor/outdoor connecting wire. (Refer to 2.) (3) Remove the indoor electronic control P.C. board holder (4) Disconnect the following connectors: <Indoor electronic control P.C. board> CN1R1 (Interlock switch) (5) Pull out the drain hose from the nozzle assembly and remove the nozzle assembly. (6) Remove the interlock switch.	**Photo 4** 
5. Removing the horizontal vane motor (1) Remove the nozzle assembly. (Refer to 4.) (2) Remove the screws of the horizontal vane motor unit. (3) Disconnect the connector from the horizontal vane motor. (4) Remove the screws of the horizontal vane motor. (5) Remove the horizontal vane motor from the horizontal vane motor unit.	**Photo 5**

OPERATING PROCEDURE

6. Removing the indoor fan motor, the indoor coil thermistor, and the line flow fan

(1) Remove the panel (refer to 1.) and the corner box.
(2) Remove the indoor electronic control P.C. board holder, the electrical box and the nozzle assembly.
(3) Remove the screws fixing the motor bed.
(4) Loosen the screw fixing the line flow fan.
(5) Remove the motor bed together with fan motor and motor band.
(6) Release the hooks of the motor band. Remove the motor band. Pull out the indoor fan motor.
(8) Remove the indoor coil thermistor from the heat exchanger.
(※) Install the indoor coil thermistor in its former position when assembling it. (Refer to Photo 9)
(9) Remove the screws fixing the left side of the heat exchanger.
(10) Lift the heat exchanger, and pull out the line flow fan to the lower-left.

Photo 9



PHOTOS

Photo 6

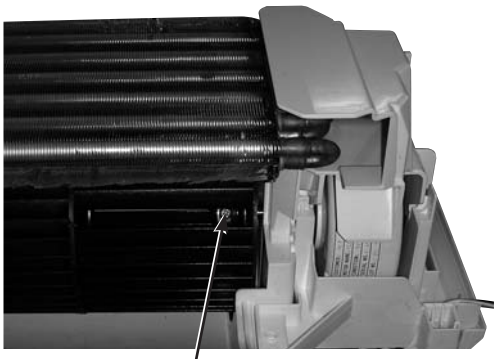


Photo 7

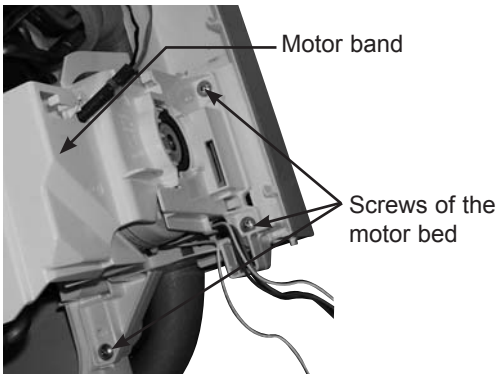


Photo 8

Mitsubishi ilmalämpöpumput huoltaa ja korjaa: Jäähdytinpalvelu RefGroup Oy

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